

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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EDITORIAL COMMENT.

Aircraft at the Naval Review.

The aspect of the recent inspection by His Majesty the King of the great fleet gathered at Spithead which has most appealed to those who have followed it with intelligent appreciation, does not seem to have been so much the terrific power for destruction of the mighty armada of ships as the importance of the new element introduced into naval war by the coming of the seaplane and the airship. The sight of the seaplanes flying over the King's yacht, dipping in salute as they flew and manœuvred in the air, seems to have impressed people with a feeling that in these craft we have the potentialities of a development in war as great, if not even greater, than those bound up in the submarine. That seems to be the dominant note of all the comment of the naval experts. In this connection we cannot do better than quote from a leader in the *Daily Telegraph*, which says: "They (the aircraft) represent an extension of our sea power; they are the scouts of the future. A fleet of battleships unattended by aerial craft will be blind. Cruisers, even if able to steam at thirty knots, like those now reaching completion, will be inadequate. Their range of vision is limited; their rate of steaming is insufficient. The seaplane, on the other hand, is the fastest and handiest ship ever contrived by the ingenuity of man—with a speed of seventy miles an hour in the air and a capacity for manœuvring which defies competition. In two years or so the rate of

flight has been doubled; even to-day no one can say that the limit has been reached. A fleet without aerial squadrons will be robbed of the essential intelligence service which is the talisman of victory—the foundation of successful naval tactics. . . . As we are forced to press on with the development of our sea fleet, so no effort must be spared to build up its complement—a great air service, with the most efficient airships and seaplanes."

There is nothing much to be added to these words by ourselves—they sum up the whole question admirably and succinctly. This much may, however, be said, that to us who have argued from the beginning of practical flight that there had indeed arrived a new element, a new science, which would unquestionably revolutionise all the older ideas of war and the manner of its conduct, it is something more than pleasing to be able to feel that at last the self-evident truth is finding recognition. As we have remarked more than once in these pages, recognition in these matters is half-way to accomplishment, and now that the recognition of an outstanding fact has been reached, we feel that accomplishment is not far off. Not that we can feel comfortable yet, for much remains to be done before British aerial defence will have reached the state of efficiency and preparedness which is essential. But Rome was not built in a day, neither can aerial fleets be created from nothing, and, on the whole, we are quite satisfied with the progress of the Naval Branch of aeronautics.

Eiffel and his Work.

If there be one man above all others in the scientific world of aeronautics to whom honour would be generally acknowledged as due, that man is surely M. Eiffel. His first volume recounting his experiments on the resistance of the air at the Eiffel Tower was published in 1907, and a second volume examining the formulæ and his experiments in this direction saw the light in 1910. Later in the same year, the well-known aeronautical classic—*La Resistance de l'Air et l'Aviation*—was issued, a revised and augmented edition being published during the following year, 1911. Both of these works are regarded as standard text books upon the subject with which they deal by designers and students of aeronautics all over the world, to whom they have proved of incalculable benefit. The results of his researches have probably been quoted more frequently by lecturers and writers on aviation than those of any other experimenter, and have rendered signal service to almost every aeronautical engineer.

It was suggested by one speaker at a meeting of the Aeronautical Society, during the session which has just closed, that the field of research in aeronautics was so vast that the establishment of laboratories in connection with the works of aeroplane manufacturers was highly desirable, and would in no way militate against or limit the activities of the National Physical Laboratory at Teddington. If any proof were needed in support of this statement it is adequately afforded by the most recent publication of M. Eiffel—*Nouvelles Recherches sur la Resistance de l'Air et l'Aviation*—a work that deals with the experiments he has conducted since 1911 in his new laboratory at Auteuil. This book is now in two volumes, one of which gives the text, and the other the tabulated numerical data and diagrams relating to his researches.

Coming so soon after the issue of the Technical Report of the Advisory Committee, one is tempted to make comparisons between them, but they do not lend themselves to this process because of the differences in the subjects touched upon, and the variations in the nature of the objects of the experiments recorded. The staff of the N.P.L., while developing research into the various factors affecting the aerodynamic properties of a limited number of aeroplane wings and propellers have, in the main, been concerned with new ground, new lines and methods of research, always the more difficult work, notably in regard to stability, to which one-third of the recent Blue Book is entirely given up. The R.A.F. also contributed a report on full scale work. M. Eiffel, on the other hand, has been mainly concerned with the aerodynamic properties of a large number of aerofoils, and the study of scale models of complete aeroplanes, seaplanes and airships. Hence the subject-matter of the experiments at the two laboratories are dissimilar, although research of a like character to some of Eiffel's, but on a less pretentious scale, has already been conducted at the N.P.L. Some of the work recorded by Eiffel concerns old and superseded machines, as is only to be expected, and it is because the publication of the results of research of a number of experimenters in volume form necessarily means delay, that we have so repeatedly advocated the more frequent issue of reports. As M. Eiffel observes, however, much of the results of his work has been already communicated to interested persons, so that progress has not stagnated through the lack of sufficient data.

After a description of the plant and the methods of testing at the laboratory at Auteuil, M. Eiffel gives a series of diagrams relating to the resultant of the forces acting upon an aeroplane under varying conditions during flight, as well as the inter-relation between the weight supported, speed, and power, with typical applications that should prove of value to the designer. He also examines the effect of altitude upon performance of an aeroplane and upon the power of the engine. The results of tests for determining the air resistance of spheres, convex and concave surfaces, cylindrical bodies

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ROYAL FLYING CORPS.

THE following promotion was announced by the Admiralty on the 16th inst. :—

Commander F. R. Scarlett, granted acting rank of Captain, to date July 14th.

The following appeared in the *London Gazette* of the 17th inst. :—
R.F.C.—Military Wing.—The appointment of Lieut. Leslie Da C. Penn-Gaskell, 3rd Batt. Norfolk Regiment, as a Flying Officer, is ante-dated to Feb. 26th, 1914, but without pay or allowances prior to March 18th, 1914.

Military Aeroplane Competition in U.S.A.

A COMPETITION open only to American makers is to be held

which vary in the ratio of length to diameter and in the formation of the ends, struts and models of aeroplane bodies at speeds varying between 4 and 30 metres per second are then recorded, and he proceeds to deal with his experiments on wings, which are of an extremely interesting nature.

In this chapter over thirty wing sections are treated, many of which are similar to current types, although some are of curious design, and we note amongst them those of the Wight seaplane and the Bristol scout. As regards the former, while the curves of lift and drag, the ratio of lift to drag and the pressure distribution are given, the movement of the centre of pressure with varying angles of incidence are not recorded, although it can be deduced from the data supplied. In the results of a wing, however, of similar design, but inferior aerodynamically, it is shown that the centre of pressure varies from about 0.34 to 0.42 of the chord from the leading edge for all angles of incidence, which accounts largely for the excellent flying qualities of the machine to which it is fitted. The high efficiency of the Coanda wing section on the Bristol scout, concerning which M. Eiffel speaks in terms of high praise, is also indicated, the ratio of lift to drag at from 0° to about 4° angle of incidence being approximately 0.06.

The next chapter deals with the interference of various wing surfaces when placed in tandem or when staggered. As regards the latter, some confirmation of the N.P.L. results is given, since a general increase in efficiency is shown when the upper plane is placed in advance of the lower to the extent of 0.4 to 0.45 of the chord; although, as Eiffel states, for some flight angles there is little difference between the results obtained, and those for the commoner arrangement—non-staggered. It is interesting to note that the lift curve is very slightly improved for the upper surface by staggering the planes, while that for the lower surface is much diminished, but as, however, the drag is also reduced by a greater or a proportionate amount at ordinary flying angles, the ratio of lift to drag of the two wings is either increased or but little affected.

The experiments on model aeroplanes are then fully considered. A novel type of machine with tandem planes, and a cigar-shaped body with the propeller in the middle of its length, being amongst those treated in the text. The next chapter gives much data respecting the air resistance of floats and of bodies. Chapter VIII is devoted to the consideration of airships of various makes, including the Clement Lebaudy, Fleurus, and the Astra-Torres. The last two chapters deal with wind pressure on airship sheds and the propeller—the latter being exceptionally well treated, especially as regards the effect of the number of blades on power and efficiency.

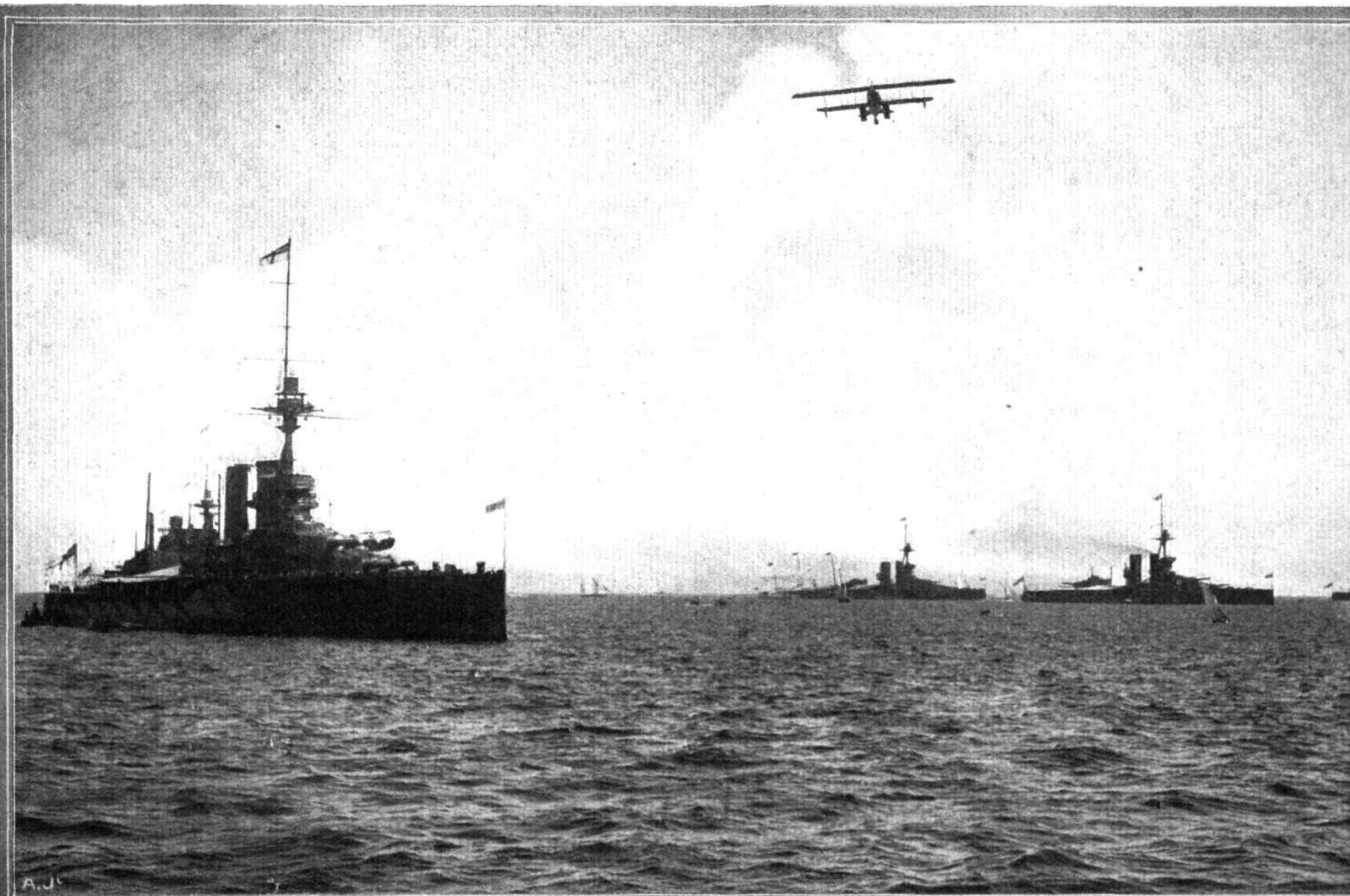
The work—a truly monumental one, well up to the standard of its predecessors—concludes with seven appendices, two of which relate to the method employed by Drzewiecki in the design of propellers.

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by the U.S. military authorities at San Diego, Cal., next autumn. There will be prizes of \$12,000, \$10,000 and \$8,000 for the three machines which make the best performances, while orders will be given for at least twenty other machines. Competing aeroplanes will be required to carry a pilot and passenger, have a speed variation ranging from 40 to 70 m.p.h., and be capable of rising 4,000 ft. in 10 mins., while other points which will be taken into consideration will be handling of machine in restricted space, quickness of assembling and dismantling, ability to land on and start from rough ground. The total amount which will be available for this competition and the other aeronautical requirements of the U.S. Army is \$250,000.

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THE GREAT NAVAL REVIEW AT SPITHEAD.—Seaplane No. 77 flying over the super-Dreadnoughts "Iron Duke" and "Marlborough" (on right) and "Centurion" (on left).

THE CENTRAL FLYING SCHOOL AT UPAVON.

IN FLIGHT for June 26th and the 3rd instant we published particulars of the organisation and the work carried out at the first Concentration Camp at Netheravon, by the Military Wing of the Royal Flying Corps. Now we are able, by permission of the Commandant (Capt. G. M. Paine, C.B., M.V.O., R.N.), to whom we are especially indebted for the facilities that were afforded us during our visit to the Central Flying School, to give our readers an account of the excellent scheme of training which our Naval and

and an officer in charge of Transport; but several officers, other than those especially borne as Instructors in Flying, who also have other responsible duties in connection with the maintenance of their machines—the control of workshops, and the giving of lectures, for example—are engaged for a part of their time in this particular class of work.

Officers and Men under Training.—At the present moment there are some 40 officers drawn from the Army, the Navy, the Colonial



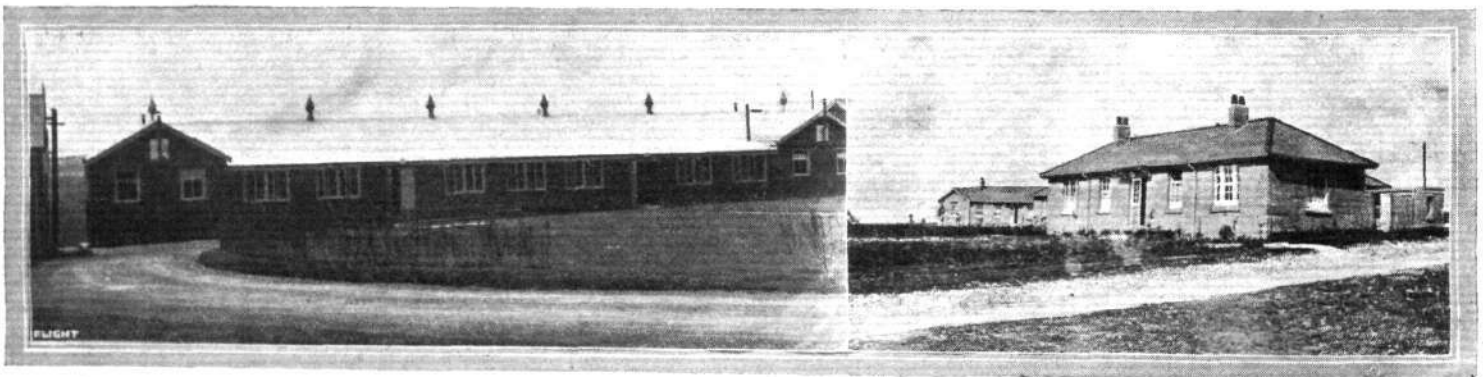
CENTRAL FLYING SCHOOL, UPAVON.—N.C.O.s and men's quarters.

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Military pilots and the air mechanics undergo, before joining the various air stations and squadrons.

Staff.—The School, which is under the control of the War Office, has a permanent staff of 14 officers, 3 warrant officers, and a number of flight sergeants, sergeants, corporals, 1st class air mechanics, 2nd class air mechanics and boys, all of whom with the exception of the last-mentioned, who enlist from the Gordon Boys' Home, are drawn from the Army and the Navy in, approximately, the proportions of two from the former to one from the latter branch of the service. We believe that this is the only military organisation in this country

Forces and Civilians, undergoing instruction, most of whom had already obtained their pilot's certificate before entering the School. But, in general, their experience in flying, which (by the way) constitutes only a fraction of the work forming the course, is more or less limited to one or two types of machine, and hence they require a much more extended experience apart from cross-country flights, before they can be regarded as expert pilots; whilst in addition there are a number of air mechanics who are taught to fly during the time they are at the School, and a still greater number who undergo mechanical training alone. It is really important, if a true concep-



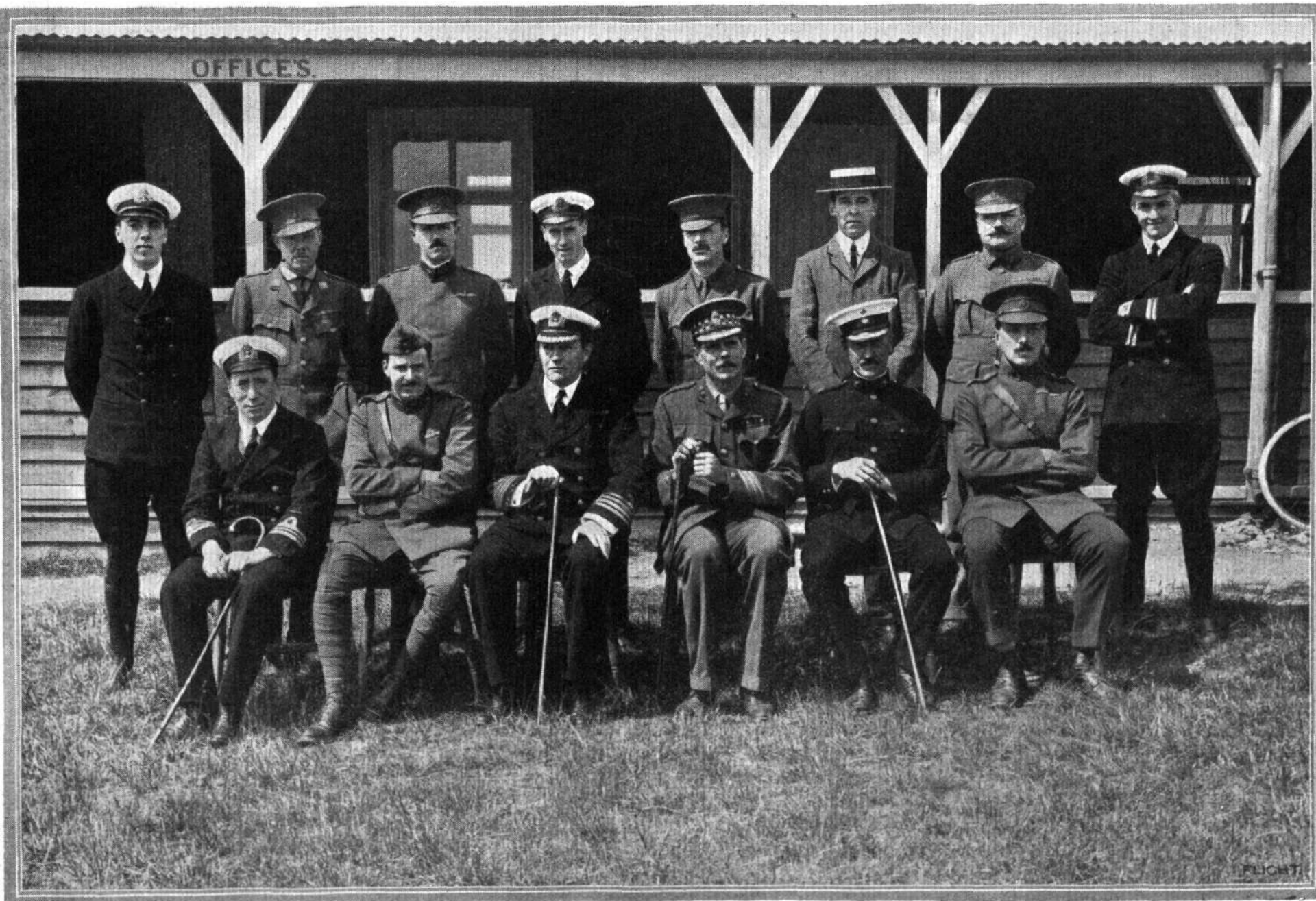
CENTRAL FLYING SCHOOL, UPAVON.—On the left officers' mess, and on the right permanent quarters of the staff.

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wherein representatives of all grades of the Naval and Military form a joint staff. The officers forming the staff of the Commandant are: The Assistant-Commandant (Major H. M. Trenchard, C.B., D.S.O.), Secretary (Assistant Paymaster J. H. Lidderdale, R.N.), the Medical Officer, Quartermaster, Meteorologist, five Instructors in flying, an Instructor in the Theory and Construction of Aeroplanes

tion of the magnitude of the work carried out during instruction at Upavon is to be gained, to appreciate the fact that the tuition in flying received by an officer prior to commencing the course is regarded as merely preparing him for instruction in the more serious duties of the career which he is about to enter upon.

For instructional purposes, officers and men are attached to the

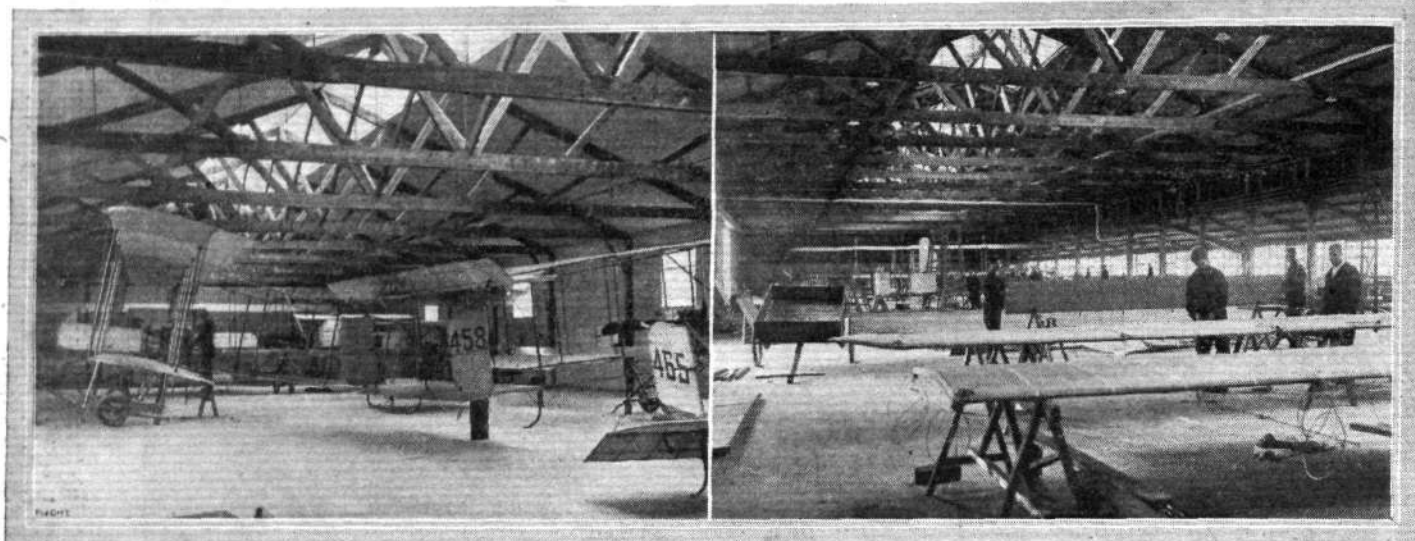


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THE STAFF OF THE CENTRAL FLYING SCHOOL, UPAVON.—From left to right; (Standing) Sub-Lieut. Pierce, R.N.; Lieut. Conran; Capt. A. G. Board, Asst.-Paymaster J. H. Lidderdale, R.N.; Capt. E. G. R. Lithgow, R.A.M.C.; Mr. G. Dobson, M.A.; Lieut. Kirby, V.C.; Eng.-Lieut. C. D. Breeze, R.N.; (Sitting) Lieut.-Commr. Shepherd, R.N.; Capt. A. C. H. MacLean; Capt. G. M. Paine, C.B., M.V.O., R.N. (Commandant); Major H. M. Trenchard, C.B., D.S.O. (Asst.-Commr.); Major E. L. Gerrard; Capt. T. I. Webb-Bowen.

flights, of which there are four—A, B, C and D. D Flight has Henry and Maurice Farmans, and one Blériot; B and C Flights have Maurice Farmans and B.E.s, while A Flight is composed of B.E.s. and Avros, the number of machines totalling 42. Some of each type of these machines are fitted with dual control levers. Flying usually takes place during the early morning and in the evening; in the summer, from 4 a.m. to 6.30 a.m. and from

are in course of erection, some having been already completed. All the aeroplane sheds and the workshops are fitted with hot-water heating systems for the purpose of maintaining an equable temperature all the year round, the boiler for supplying each building being located at the rear. The aeroplane sheds for the four flights form two sides of a rectangle, those for D Flight and the offices being along one side, with the officers' and men's quarters and the shops



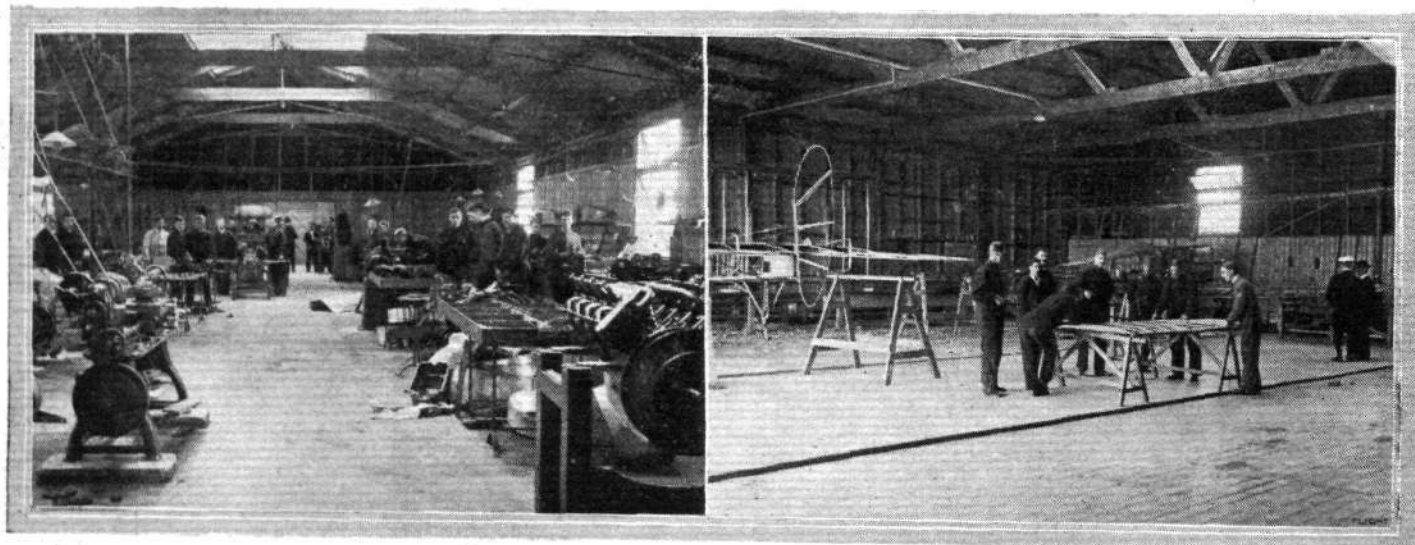
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CENTRAL FLYING SCHOOL, UPAVON.—The left-hand photograph shows the interior of one of the aeroplane sheds of B Flight. On the right is a view of the interior of the aeroplane repair shop.

4.45 p.m. to 8.15 p.m., and the assembling of all the machines outside the sheds prior to the commencement of flying presents an extremely interesting spectacle, as may be seen on referring to some of the accompanying photographs; but, not infrequently, flights are made a little earlier in the morning, while when a pilot becomes more expert, he is required to make cross-country flights at some time during the day. Lectures on various subjects are delivered from 12 noon to 1 p.m., and the remainder of the day is spent either in the workshops (during the period of mechanical training), in the flights or in resting. The keenness of the officers may be

behind. In front of each group of sheds is a strip of asphalt, which enables the propellers to be swung, in starting up the engine, with safety in wet weather; and beyond these stretch two exceptionally fine aerodromes, which, however, appear none too large when flying is in progress and as many as thirty machines are in the air at one time; while still further on are the "gallops," in the vicinity of which preliminary instruction in flying is given.

We have already mentioned that the shops are located immediately behind the D Flight. The first shed forms the repair shop, where overhauls, repairs and renewals which are within the capacity of the



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CENTRAL FLYING SCHOOL, UPAVON.—On the left, the engine repair shop with the engine instruction room in the distance. On the right, the construction shop, wherein are skeleton B.E.s. and a Farman machine for the instruction of officers.

appreciated from the fact that many are prepared to sacrifice a portion of their leisure in order to acquire a fuller practical knowledge of engine construction outside that which comes within the normal working course of instruction.

Buildings.—The buildings at Upavon are at present of wood roofed with corrugated iron; but many are now having their sides covered with galvanised iron, and permanent quarters for the Staff

School, but beyond those of the flights, are attended to. In other cases, where extensive damage has been done or a complete overhaul has become necessary, the machines are either returned to the makers or sent to the R.A.F. for attention. Here machines are dismantled, and after the necessary repairs have been effected, or the damaged part renewed, are re-erected and sent out for test. The interior of this shop, which is in charge of Capt.

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CENTRAL FLYING SCHOOL, UPAVON.—A B.E. 8 in flight during evening practice.

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CENTRAL FLYING SCHOOL, UPAVON.—A view of the machines of A, B, and C Flights on the asphalt in front of the sheds during preparation for the evening practice. The machines missing from the centre of the line are the four Avros, which were undergoing overhaul at the time of our visit.

Webb-Bowen and a master mechanic, who have a staff of three sergeants and sixteen men, is shown in one of the accompanying photographs.

Passing on, we come to the engine shop, which is divided into two portions. In the first and smaller part are various sectioned examples of actual engines, as well as the engines complete. These latter are used for instructing officers and men in engine construction, dismantlement and assembling, as well as for demonstrating the method of timing the ignition and the valves, &c. The second part is the engine repair shop proper, where the engines used in the flight machines are periodically overhauled and the necessary adjustments made by the staff mechanics. This shop contains a good equipment of electrically driven machine tools, as well as an acetylene welding plant and an apparatus required for white-metalling engine bearings.

The next shed is the fabric shop where aeroplane wings, rudder,

elevators, &c., are re-covered and doped. Across the road, at the far end of D Flight aeroplane sheds is the rigging or "construction" shop, in which are three full-size skeleton aeroplanes. Two of these were assembled and the third was being prepared for erection by the officers forming the class. This work is an important part of the curriculum, as in addition to familiarising those under training with the constructional details of the machines, it also renders them thoroughly conversant with the manner in which aeroplanes are assembled, trued up and repaired. The instructor (Engineer-Lieut. Breeze) alters the adjustment of the bracing as he considers desirable, or breaks a certain part of a wing, &c., and the alterations necessary or the repair required are effected by the members of the class under instruction. In some cases the machines (which it is hardly necessary to say are used solely for this purpose) are dismantled, re-built and trued up several times by a single class.

(To be concluded.)

ROYAL FLYING CORPS (MILITARY WING).

WAR OFFICE summary of work for week ending July 17th, 1914:—

No. 2 Squadron, Montrose.—No. 2 started on their return journey to Montrose on the 13th July; reached Lincoln that evening, and left Scarborough the following day. They have since been detained at Scarborough by heavy rain. Machines, transport and personnel are moving together, as on the journey down.

Nos. 3 and 4 Squadrons, Netheravon.—These two Squadrons have been engaged daily in carrying out the course of instruction for 10 Officers drawn from regular units and in observation of artillery fire. The course is progressing satisfactorily.

No. 4 Squadron has also done some night flying, and a convoy run by night by the whole Squadron Mechanical Transport.

No. 5 Squadron, Fort Grange.—No. 5 Squadron is busy getting settled in at their new Station, Fort Grange. Machines are being flown over from Netheravon and Farnborough as temporary tent sheds are erected for housing them. It is expected that work on the permanent sheds will be commenced shortly.

No. 6 Squadron, Farnborough.—Pilots were out daily engaged on observation work in connection with the training of the 1st and 2nd Divisions. This Squadron should be completed in personnel in another two weeks' time by drafts from the Recruits Depot.

Nos. 1 and 7 Squadrons, Farnborough.—The organisation of these two new Squadrons is progressing. No. 1 Squadron will receive one complete flight in personnel (less officers) from No. 2 Squadron as soon as the latter arrive at Montrose. No. 2 Squadron has been training a flight with this object in view.

Aircraft Park, Farnborough.—Repair work on Aircraft and Mechanical Transport and technical training of recruits was carried out daily.

Headquarter Flight, Farnborough.—Experiments of various kinds were continued, in connection with which a considerable amount of flying took place.

Recruits Depot, Farnborough.—There are now over 100 recruits "on the Square," divided up into 5 squads. The initial

training of recruits is of a wide scope, and includes, in addition to courses of instruction in technical duties connected with the maintenance of aircraft and mechanical transport, drill, physical training, musketry, athletics, boxing, lectures and practical instruction in first aid, sanitation, field cooking and map reading, lectures on military discipline, and the organisation of the Army, particularly of the Royal Flying Corps (M.W.).

THE DISASTER AT GOSPORT.

It is with the greatest regret that we have to record the accident which cost the life of Lieut. L. C. Hordern on Monday last. The deceased officer was attached to No. 5 Squadron of the Military Wing of the R.F.C., which has just been transferred to Fort Grange, Gosport, and he was flying a 80 h.p. H. Farman biplane, with Sergeant Campbell as passenger. The latter sustained a broken leg, but it is progressing as well as can be expected.

At the inquest on Wednesday, Lieut. H. M. Brock said that he watched the machine go away in a westerly direction two or three miles. On its approaching the fort again from the west he heard the engine stop and saw the biplane glide down from a height of 800 ft. in what developed into a very sensational spiral. He realised there was something wrong. The machine made three and a quarter complete left-handed circles before striking the ground. He came to the immediate conclusion that the rudder control had jammed, but later inspection of the machine on the ground revealed nothing to show that any of the controls had jammed. The machine was fitted with dual control which could be used by either the pilot or observer, but it was a recognised practice that the observer was never to touch the controls. He was of opinion that either the pilot or observer got one of his feet jammed in the rudder bars. Lieut. Brock added that he flew the machine on Friday, when there was some irregularity due to the rudder bar, but that had been put right. Similar evidence was given by Major Higgins and Capt. Grey, and the jury returned a verdict of "Accidental Death," adding an expression of opinion that better medical provision should be made at the Fort Grange flying centre.

FLYING AT HENDON.

THE meeting on Thursday of last week opened with exhibition and passenger flights by R. J. Lillywhite and N. Howarth on the 50 h.p. G.-W. bi-rudder 'bus, A. E. Barrs on the Blériot, and Louis Noel on the G.-W.-Maurice Farman. Barrs had a passenger and flew high, and Noel had Capt. Upton (pupil) as passenger. W. L. Brock then made an altitude flight on his prize-winning 80 h.p. Morane-Saulnier, after which Barrs, Lillywhite and Noel made passenger flights, the latter on the Maurice Farman, and the others on the 80 h.p. Blériot. Pierre Verrier then came out on the 70 h.p. Aircraft-Maurice Farman, and made a cross-country flight with a lady passenger. He returned to the aerodrome at an altitude of about three or four thousand feet, from which height he descended with his engine stopped. R. H. Carr went up next on the 80 h.p. Blériot with a lady passenger from South Africa, who thoroughly enjoyed her flight, and afterwards made a tour of the hangars. Lillywhite then gave a fine exhibition on the bi-rudder 'bus performing "stunts" which, considering the type of machine he was flying, were quite remarkable. The work—school, exhibition, passenger and racing—this machine and the two other G.-W. 'buses have done seems to be something near a record, and it makes one wonder if they will ever be pensioned off. Fit as they are for still further work, we cannot help thinking that newer machines might well relieve them of some of the hard work to come. At about 4.30 p.m. J. L. Hall came out on his 50 h.p. Avro, and Lillywhite took up another passenger on the bi-rudder 'bus, after which Carr gave a looping demonstration on the G.-W. 50 h.p. tractor biplane "Lizzie," making two loops and a tail slide. The last flights of the evening were made by F. G. Dunn on the bi-rudder 'bus, Hall with a passenger on his Avro, Brock with a passenger on the Morane-Saulnier, and E. Baumann on the Wright biplane, after which school work started.

Saturday last was rather "bumpy" from the aviator's point of view, but fine and sunny for the spectators. The first half of the afternoon was devoted to exhibition and passenger flights, mostly the latter. The pilots and the number of passengers taken were as follows:—Louis Noel on the 80 h.p. Morane-Saulnier (3) and 70 h.p. Maurice Farman (1), A. E. Barrs on the 80 h.p. Blériot (3), R. H. Carr on an 80 h.p. Morane-Saulnier (3), P. Verrier on the 70 h.p. Aircraft-Maurice Farman (3), W. L. Brock on his 80 h.p. Morane-Saulnier (1), and R. J. Lillywhite on the 50 h.p. G.-W. bi-rudder 'bus (1). Solo flights were made by Brock on the Morane, Lillywhite on the bi-rudder 'bus, and René Desoutter on the 60 h.p. Caudron.

At 4.30 p.m. a start was made for the 16-mile cross-country handicap for the Hendon Cup and £20. As the wind was blowing from the south-west the machines were lined up in the middle of the aerodrome facing the enclosures, so that they could get off against the wind. There were eight starters as follows:—R. J. Lillywhite on the bi-rudder 'bus (9 mins. 17 secs.), Claude Grahame-White on the Maurice Farman (6 mins. 32 secs.), René Desoutter on the 60 h.p. Caudron (6 mins. 17 secs.), P. Verrier on the Aircraft-Maurice Farman (5 mins. 22 secs.), A. E. Barrs on the 80 h.p. Blériot with a passenger (2 mins. 47 secs.), Louis Noel on the 80 h.p. Morane-Saulnier (12 secs.), R. H. Carr (2 secs.) and W. L. Brock (scratch) on similar machines.

Throughout the race all interest was centred round the three Moranes, and their "get away" was extremely thrilling, as all three got off and rounded No. 1 pylon very close together. Carr got in front of Noel after completing two laps of the circuit, which was to Bittacy Hill and back four times, whilst Brock flew high with the intention of diving at the finish. He was unable to do this, however, as he was too close to the other machines. After having completed two laps, Barrs disappeared from view, and no one noticed where he had come down. Both Lillywhite and Verrier retired on the third lap. The first to cross the line was Carr, Noel following 29 secs. after, with Brock $\frac{1}{4}$ th of a second behind. Grahame-White came next, 17 $\frac{1}{2}$ th secs. after Brock and 1 min. 33 secs. in front of Desoutter. As soon as the race was over Grahame-White and Lillywhite went up to look for Barrs. After circling about just outside the aerodrome, Grahame-White was seen to land, and shortly after both he and Lillywhite returned with the news that pilot and passenger were safe but that the machine was smashed. We were no sooner relieved of anxiety on this matter when another incident occurred which caused some alarm.

Desoutter had ascended with a passenger on the Caudron, and when over the railway his passenger, who was making his first flight, appeared to be taken with a desire to get out and walk. Desoutter was naturally somewhat alarmed, and wisely decided to descend at once, which he did, unfortunately in bad ground, with the result that the chassis gave way when an attempt was made to avoid some fencing. This caused a skid to dig into the ground, and

so turn the machine over on its nose upside down. Neither pilot nor passenger were injured, and all the damage done to the machine was a broken skid, one or two struts and ribs. It was certainly an unpleasant experience for Desoutter, and we congratulate him on coming out of it as well as he did. After this little episode, Carr gave a looping display, making three loops and a tail slide on the 50 h.p. G.-W. tractor biplane "Lizzie." For the rest of the evening the various Hendon pilots made exhibition and passenger flights. Amongst the passengers taken up during the afternoon was one of the U.S.A. Navy officers visiting this country.

Sunday was fine and showery at intervals, and there was a good attendance of visitors. Louis Noel and R. J. Lillywhite were busy with passengers on the Maurice Farman and the bi-rudder 'bus respectively. R. H. Carr and W. L. Brock both made altitude flights on 80 h.p. Morane-Saulniers, the former reaching an altitude of 8,500 ft., and the latter 9,700 ft. Later in the evening Brock made another altitude flight, climbing to 4,000 ft. Carr also gave a looping display on the 50 h.p. G.-W. tractor biplane "Lizzie," on which he made three loops and a tail slide. Other flyers out were F. G. Dunn, R. T. Gates, and M. Osipenko on the bi-rudder 'bus, and E. Baumann on the Wright biplane.

Result of Cross-Country Handicap (16 Miles) for Hendon Cup and £20.

	Handicap.		Time.	
	m.	s.	m.	s.
1. R. H. Carr (80 h.p. Morane-Saulnier mono.)	0	2	23	6
2. Louis Noel (80 h.p. Morane-Saulnier mono.)	0	12	23	35
3. W. L. Brock (80 h.p. Morane-Saulnier mono.)	scratch		23	35 $\frac{1}{2}$
4. C. Grahame-White (70 h.p. Maurice Farman biplane)	6	32	23	53
5. René Desoutter (60 h.p. Caudron biplane)	6	17	25	26
A. E. Barrs and passenger (80 h.p. Blériot monoplane)	2	47	—	
P. Verrier (70 h.p. Maurice Farman biplane)	5	22	—	
R. J. Lillywhite (50 h.p. G.-W. biplane) ...	9	17	—	

⊗ ⊗ ⊗ ⊗

A Picture for Sale.

It may be of interest to some of our readers to know that the painting, "A Caudron Amphibian being flown on the French Coast," by Mr. Roderic Hill, which has attracted a good deal of attention in the aviation section of the Anglo-American Exhibition, is for sale. The picture, which is painted in "Tempera" colours, measures 20 by 30 ins.



Mr. Landry, the first French Canadian to take his F.A.I. brevet at Buc.

SHOREHAM TO HENDON.

SOME IMPRESSIONS OF A NON-STOP FLIGHT.

By MISS M. LOUISE ELLIOTT.



Miss M. Louise Elliott.

VISITORS to Hendon are accustomed to seeing a little tractor bi-plane slip out from a group of sheds at the far end of the enclosures, lift and climb steadily in ever-widening circuits, until it becomes an infinitesimal speck which vanishes above the clouds. Suddenly a silver spark flashes out from a space of blue sky, like a new and brilliant evening star—the tractor screw, flashing in the

sunlight as the machine turns and commences its descent. It comes back, circles the aerodrome again and again, floating slowly round and downwards with propeller stopped, and, after a perfect landing, finally comes to rest by its own shed.

Possibly the megaphone man has announced the name of the pilot and machine, but if he has not it is of no consequence. "Good wine needs no bush," and Mr. Laurence Hall's flying of the Avro announces itself.

I have done a good deal of passenger flying at Hendon, on different types of aeroplanes, and with some of the best pilots of the day. There is no need to make any odious comparisons, but it may safely be said that the steadiness, controllability, and general comfortableness, if one may put it in that informal way, of the little 50 h.p. Avro make it a delightful machine to fly in, and that anyone who has made even a single flight with Mr. Hall can have nothing but supreme confidence in his ability as a pilot.

Moreover, aerodrome flying is all very well, but the "out and home" variety is better, and a genuine cross-country flight over a fair distance is real aviation, or should be. So altogether, when I found myself, in company with several keenly interested friends, at the very successful inaugural week-end meeting at the Shoreham Aerodrome, and knew that I was to have the privilege of accompanying Mr. Hall on his return flight to Hendon, I felt pleased with myself and all the world.

Shoreham has many of the qualities of the ideal aerodrome—even service, open surroundings, boundaries guiltless of trees, and excellent atmospheric conditions. One of my most delightful recollections will always be a long flight I had with Mr. Hall on the Sunday afternoon. We went out round the country and over the sea, and the sea, beautiful as it always is, never looks so beautiful or so wonderful as from an aeroplane; and my friends

told me afterwards that when the machine disappeared through and above the clouds for a time, the excitement among the crowd was intense.

We were to make the return flight on either Monday afternoon or Tuesday morning, according to circumstances, but on Monday the wind was so high that it would have been unwise to start, until too late to reach Hendon by daylight, so Mr. Hall, with sound north-country common sense, utilised the interval in having the machine thoroughly overhauled and tested. One reason for the successful record of the hard-worked little Avro is the fact that it is always kept in the most perfect flying condition, and in this respect it is an object-lesson to many bigger and more ambitious machines. As luck would have it, more things went wrong on that Monday evening than during the preceding six months, but they were all successfully negotiated, from a broken tail-skid to a missing petrol funnel.

Tuesday morning dawned bright and clear, and very soon after the appointed time we were off. We started with two or three typical wide circuits, the Avro climbing beautifully; but the wind was up early too, and just at first we were badly bumped about—upwards, downwards, first on one side and then the other. The bumps did not worry me in the least, for we steadied again instantly after each one of them, and they really only showed how perfectly the pilot had the machine in hand. I sat and watched the blue sea, veiled by a tender haze towards the horizon, and edged by a white thread of breakers against the stone-coloured beach; the red-and-white toy bungalows grew smaller every moment, and at something over 2,000 ft. the wind grew steady, and we turned and shot inland, still climbing at a terrific pace.

We were very soon well over 4,000 ft., and going across what, to me, was unknown country, with no resemblance to what one sees when travelling to or from Brighton in the ordinary way. Once or twice we saw in the distance a dark patch, which developed into the streets of a town, and fled away behind us. Here and there a dark line marked a railway, a white one a road; a patch of greenish-blue meant water. So we went on through the fresh clear air of the summer morning, high above the dusty, weary world, with everything except ourselves—and when I say "ourselves" I count the Avro as one—unsubstantial as the fabric of a vision. Filmy wreaths of cloud played hide-and-seek with us, or flung their shadows on the dim green fields lying infinitely far below, with the hedges seeming to run into one another as they raced past beneath us. On either side of me our wings stretched out, creamy-golden, the stay-wires flashed in the sunshine like silver; before, the engine sang rejoicingly, and behind, unseen but unfaltering, were the watchful eye and steady hand on which our fates depended.

It was with a positive crash of disappointment that I heard a voice behind me say "Brooklands!" and saw the great motor track, looking like a miniature model, far down beneath us, for, with our low-powered engine, we had expected to take perhaps an hour in getting to Brooklands, and had arranged, therefore, to land there on our way. And now we seemed to have only fairly started, we were going splendidly, and the idea of stopping was most distasteful. To my joy, we did not descend. We had

JULY 24, 1914.

FLIGHT



RIGHT

A silhouette against the clouds at Hendon of J. L. Hall on the Avro.

done the greater part of our journey, and had a good half of our resources still in hand. To have turned into the high wind for the sake of making an unnecessary landing would have been sheer waste of time and trouble, and so we left Brooklands behind us and raced ahead.

Just after this, the machine surprised me by wavering a little once or twice, for the first time since we left Shoreham—it had been as steady as a rock ever since. I put it down to the state of the air, which was quite different as we neared the Thames, but Mr. Hall explained afterwards that when we started he had the compass set for Brooklands, and after passing there had been busy resetting it for Hendon, with altered course and wind accordingly. Over the river and beyond it, the wind was very tricky, and there were patches of haze and cloud everywhere; London itself lay under a thick blanket of black smoke. Only a few minutes after crossing the Thames I recognised the Welsh Harp, and then, in no time at all, microscopically tiny and with colours dulled by the mist, the red-white-and-blue pylons of the London Aerodrome.

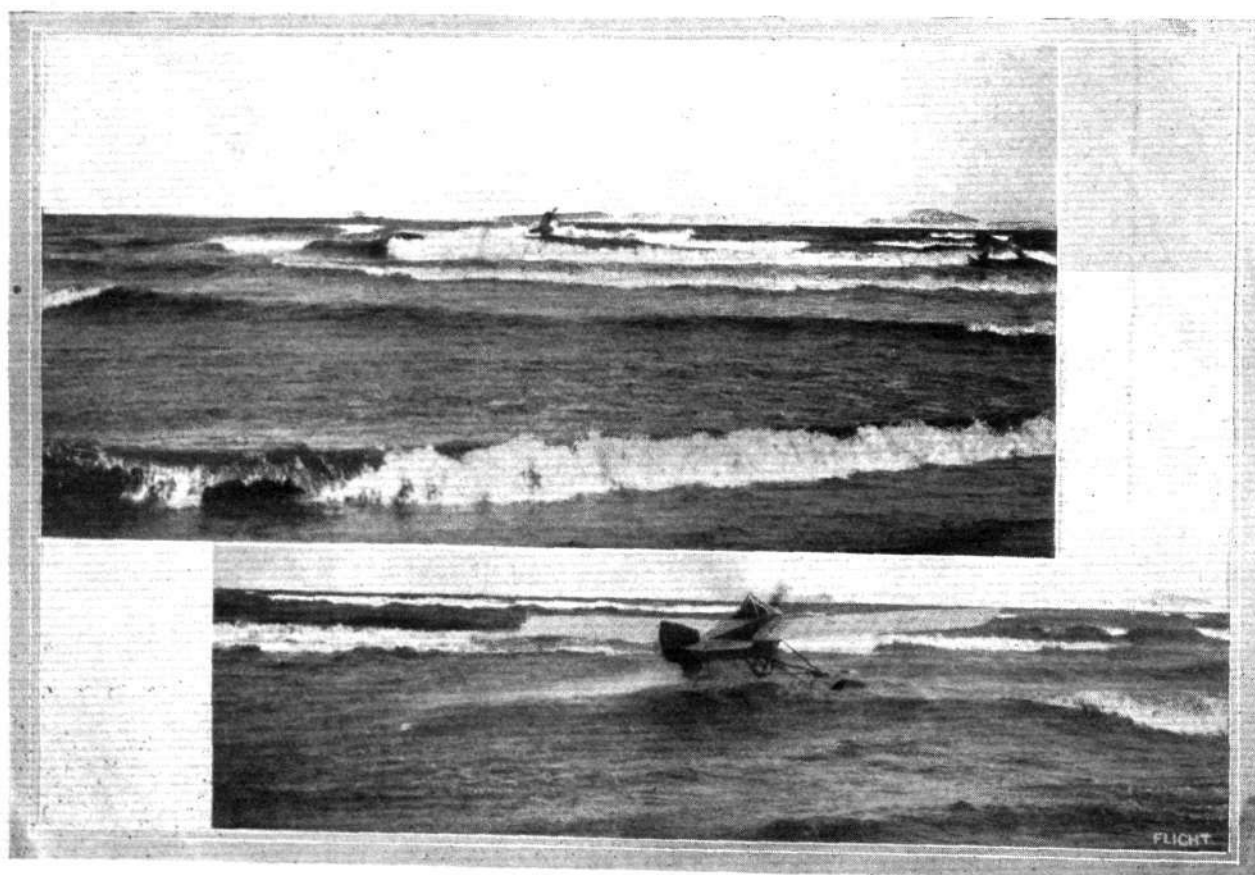
The song of the engine ceased, the propeller slackened, stopped; and slowly, gently, we floated round the whole extent of the aerodrome for perhaps a couple of circuits. I know of nothing so indescribably fascinating as this particular feat, and Mr. Hall executes it to perfection, but it cannot be done on every machine, nor should it be attempted by any but a thoroughly capable and resourceful aviator, as the sequel shows. Whether the spirits of the air at Hendon were annoyed at having been neglected, even for a week-end, I cannot say, but apparently they withdrew their support from us, for we suddenly and quite simply fell down. I had always wanted to know what

this particular experience felt like, and now I do, but I had barely time to realise it properly at the moment. The voice behind me said "*Remou!*" the nose of the machine went down in a nearly vertical dive, the propeller spun round again, and in far less time than it takes to tell we were on our way in a normal attitude, and at full flying speed. It was a magnificent "save" at the end of an altogether fine piece of flying. I would not have missed it for the world, and my one regret was that there were not more people there to see it.

After that, anything else would have been an anticlimax, so we came down, landing so beautifully that it was impossible to tell when we touched the ground. We made our way to the telephone office, and I addressed the inevitable stack of picture postcards, while Mr. Hall rang up Shoreham to announce our safe arrival. I knew we had done well, but the real fun of the thing only struck me when he got through to his mechanics, who had just settled down to a well-deserved breakfast, and found it at first difficult to convince them that we had really reached Hendon. They did not give us credit for getting even so far as Brooklands, and thought we must have come down somewhere *en route!*

Well, it was not surprising, for we had done the whole journey, from one shed to the other, in forty-five minutes. It may not be a record, but for a little machine like the 50 h.p. Avro, handicapped by carrying a passenger, it was a first-class piece of work. At any rate, I know one person will never forget it—and that is the passenger,

H. Louise Elliott



A REMINISCENCE OF THE MONACO AERIAL RALLY.—A couple of snaps during the competition of M. A. Mallard on his Nieuport waterplane at Marseilles.

FROM THE BRITISH FLYING GROUNDS.

Royal Aero Club Eastchurch Flying Grounds.

Naval Flying.—Monday last week, fine. The undermentioned left for Portsmouth:—Com. Samson, No. 50 B.E.; Capt. Courtney, No. 153 Bristol tractor; Lieut. Osmond, No. 49 B.E.; Lieut. Davis, No. 150 Avro; Lieut. Marix, No. 104 Sopwith; Sub-Lieut. Clarke, No. 43 Bristol tractor; Sub-Lieut. Young, No. 64 Short; Sub-Lieut. Draper, No. 70 Maurice Farman. Lieut. Littleton, 103 Sopwith, landed near King's Ferry owing to leak in petrol tank, but returned to the aerodrome and left for Portsmouth on 41 Avro. Sub-Lieut. Newton Clare on 31 Henry Farman went to the assistance of Lieut. Littleton, but in landing on the rough ground buckled the planes and chassis, but was not hurt. Lieut. Spencer Grey also went to assist, with Dr. V. Wells as passenger, on 152 Short Sociable.

Tuesday, fine. No. 152 Short Sociable was the only machine up, making a number of flights.

Wednesday, wet morning and evening. No. 2 Short and 152 Short Sociable.

Thursday, fine. Nos. 45 Caudron, 3, 34 and 152 Shorts Sociable.

Friday, fine. No. 62 Short.

Saturday, No. 3 Short.

Civilian Flying.—On Monday, Mr. F. McClean made a fine flight on his Short hydro-biplane, 160 h.p., at Harty with passenger; this was the first time the machine had been out since its return from Egypt.

On Saturday, Mr. Leo Jezzi made a couple of flights on his J.A.P. 35 h.p.

Brooklands Aerodrome.

MONDAY morning last week, the Bristol, Vickers, and Blériot pupils out, also Mr. Hawker, who flew to Farnborough on a Sopwith scout. In the afternoon, Mr. Gower to Sutton and back at 3,500 ft. on the 50 Blériot. Messrs. Jullerot and Stutt solo flights on Bristol biplanes. Mr. Barnwell on a Vickers biplane, Mr. MacGordon doing good circuits and landings on Sopwith biplane, Mr. Sippe out on Mr. Creagh's Bristol biplane. Blériot, Bristol, and Vickers pupils out.

On Tuesday morning, Vickers, Bristol, and Blériot pupils at work. *Brevet* tests in good style by Messrs. A. W. Clemson (altitude 2,200 ft.) and A. S. N. C. Warrand (altitude 1,200 ft.) on Vickers biplanes, and by Mr. T. F. Routledge on a Bristol biplane.



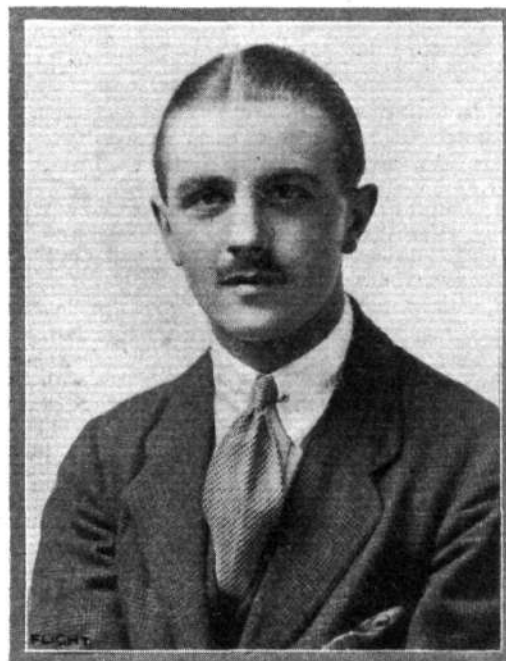
Mr. L. J. Lankester Parker, who obtained his *brevet* at the Vickers Flying School, Brooklands, on June 18th.

Mr. MacGordon doing circuits and landings on Sopwith biplane. In the afternoon, Mr. Gower to 3,400 ft. on 50 Blériot, Messrs. Jullerot and Stutt solo flights on Bristol biplanes, Mr. Sippe on Mr. Creagh's Bristol biplane, Mr. Serge de Bolotoff testing new propeller of his triplane.

Blériot pupils out Wednesday morning, Mr. Stutt on Bristol biplane, and Mr. Barnwell testing new Vickers biplane with R.E.P. engine; in the afternoon, Mr. Barnwell further testing new Vickers

biplane; Bristol, Vickers and Blériot pupils out. *Brevet* test (A) by Mr. Adamson on Bristol biplane.

Vickers, Blériot and Bristol pupils out Thursday morning, Mr. Barnwell on new Vickers biplane, arrival of Sopwith "Round Britain" machine; in the afternoon, Mr. Barnwell on Vickers gun 'bus with passengers, Mr. Raynham on Avro biplane, Mr. Gower on 50 Blériot, Messrs. Jullerot and Stutt solo flight on Bristol biplanes, Mr. Barnwell on new Vickers biplane (R.E.P.), and for several flights on the Vickers gun 'bus, Bristol, Vickers, and Blériot school work, Mr. Serge de Bolotoff testing propeller of his triplane. *Brevet* tests in good style by Mr. Adamson on Bristol biplane (B. and C.), and Mr. MacGordon on Sopwith biplane, the latter landing on the mark and reaching 1,000 ft. in the altitude test. Mr. Hawker out on his looping machine. Mr. Mahl four circuits on the "Round Britain" Sopwith.



Mr. W. D. South, who has recently secured his *brevet* at the Blériot School, Brooklands.

Friday, Vickers, Blériot, and Bristol pupils out, Mr. Mahl testing "Round Britain" Sopwith, Mr. Barnwell with Mr. B. Huskisson as passenger on the Vickers gun 'bus to Dartford, Mr. Mahl with Mr. MacGordon as passenger to Farnborough on the "Round Britain" Sopwith, the machine doing a speed test of 85.8 m.p.h.; in the afternoon Mr. Gower to 4,200 ft. on 50 Blériot, Mr. Barnwell with passenger back from Dartford, Mr. Stutt on Bristol, Mr. Knight on Vickers solo and then with pupil, Mr. Sippe on Mr. Creagh's Bristol, Mr. Mahl with Mr. MacGordon back from Farnborough.

On Saturday Blériot pupils at work, Mr. Knight on Vickers biplane, Mr. Alcock on 100 h.p. Sunbeam to Redhill and Reigate, Mr. Barnwell with Howard Flanders as passenger on the new Vickers gun 'bus for cross-country flight, Mr. Raynham on 80 h.p. Avro, Bristol school work. In the afternoon, Mr. Barnwell with passenger on new Vickers gun 'bus, Mr. Raynham to 7,000 ft. on 80 h.p. Avro, coming down in a fine spiral, Mr. Hawker testing new Sopwith scout.

Mr. Hawker gave two excellent looping demonstrations on Sunday, and Mr. Raynham was out on the 80 Avro, Mr. Barnwell on the new Vickers gun 'bus, Mr. Mahl on the 100 Sopwith (English *monosoupape* Gnome) *Daily Mail* machine, on which he took up a number of passengers, including the winner of the ballot for the free passenger flight, Mr. Edward Coulson, The Cottage, Amble, Northumberland. Mr. Dukinfield Jones solo and with passengers on the D.F.W. biplane.

Blériot School.—Rolling and straights on 25 and 28 h.p.: Messrs. R. P. Creagh, 23 mins.; A. Crick, 30 mins.; G. L. Pitt, 30 mins.; W. H. Treloar, 92 mins.; Comte Fitzjames, 36 mins.

Circuits and eights on 35 and 45 h.p.: A. Crick, 46 mins.; H. O'Hagan, 33 mins.; Capt. de Villiers, 15 mins.

Mr. V. Wilberforce 15 mins. on 45 h.p. to 1,500 ft., finishing in spiral v.p.

E. L. Gower 2 hours on 50 h.p. Gnome. A new 35 h.p. Anzani-Blériot in use for school.

Bristol School.—Monday, last week, passenger tuition to Capt. Bernard (2 flights), Lieut. Sanders (2), Mr. Collins (3), Mr. Rutledge (2), Lieut. Lawrence (4), Mr. Hay (1), Mr. Lucas (1). Solos by Lieut. Coles (2), Mr. Rutledge (2), Lieut. Lawrence (1), Mr. Adamson (2), Mr. Hay (2).

Tuesday, passenger tuition to Lieut. Sanders (1), Mr. Collins (1), Mr. Rutledge (1), Lieut. Lawrence (2), Mr. Lucas (1). Solos by Lieut. Lawrence (6 straights). Mr. Rutledge completed tests for certificate.

Wednesday morning raining. Later passenger tuition to Lieut. Lawrence (1), Mr. Adamson (1). Mr. Hay solo and smash.

Thursday, passenger tuition to Lieut. Sanders (2), Capt. Bernard (1), Mr. Collins (1), solos by Lieut. Lawrence (2) and Mr. Adamson (1). Mr. Adamson obtained certificate in windy weather.

Friday, passenger tuition to Lieut. Moule (1), Mr. Collins (2). Solo by Lieut. Coles.

Saturday, passenger tuition to Mr. Collins (9), Capt. Napier (4), Capt. Bernard (5), Lieut. Moule (1), Mr. Collins first solos (four straights).

Vickers School.—Monday, last week, with instructor: Lieuts. Wells and Clemson, and Capt. Lumsden. Lieuts. Wells, Warrand and Clemson solos.

Tuesday, with instructor: Lieuts. Clemson and Wells. Lieuts. Warrand and Clemson for *brevets* in excellent style.

Wednesday, with instructor: Capt. Lumsden, Lieuts. Wells and Gillman. Lieut. Wells solo.

Thursday, with instructor: Lieut. Gillman and Capt. Lumsden. Lieuts. Gillman and Wells solos.

Friday, with instructor: Lieut. Gillman and Capt. Lumsden. Lieuts. Wells and Gillman solos.

Saturday, with instructor: Capt. Lumsden. Lieut. Wells solo.

London Aerodrome, Collindale Avenue, Hendon.

Graham-White School.—Monday, last week, Messrs. Liu, Toolis, Gruning, Courtney, Murphy, straights, with Instructors Howarth and Barrs. Messrs. Robinson and Shepherd, solo, circuits, figures of eight, &c.

Tuesday, Messrs. Liu, Stalker, Gruning, straights with Instructor Howarth.

Wednesday, Sir A. Sinclair solo straights.

Thursday, Messrs. Upton, Toolis, straights with Instructor Barrs. Mr. Robinson circuits, &c., afterwards going in for *brevet* tests and gaining certificate.

Friday, Messrs. Winter and Lowe solo circuits, &c., Sir A. Sinclair solo straights. Mr. Lowe passing first and second part of *brevet* tests.

Saturday, Messrs. Duncan and Strickland (new pupils) rolling with Instructor Howarth. Mr. Winter solo circuits, eights, &c., afterwards going in for *brevet* tests and gaining certificate.

Beatty School.—Monday last week, Messrs. Allen (14) and Roche Kelly (24) out with Baumann and Y. Leong (13) up with Watts.

Tuesday morning, Messrs. Roche Kelly (10), Bentley (13), and Lieut. Maguire (10) out with Baumann.

Tuesday evening, Capt. Bass (12), and Messrs. Bentley (8), and Khan (5) out with Baumann, Mr. Gruning taking extra practice. Mr. Leong (12) up with Watts.

Wednesday morning, Lieut. Maguire (10) and Mr. Roche Kelly (6)

up with Baumann. Wednesday evening, Princess Ludwig of Lowenstein-Wertheim (15) and Messrs. Bentley (8) and Ruffy (6) up with Baumann and Mr. Roche Kelly (8) up with Watts.

Thursday morning, Mr. Ruffy out on monoplane. Mr. Bentley (11) up with Baumann and Mr. Leong (9) up with Watts.

Thursday evening, Messrs. Roche Kelly (10) Ruffy (10) Bentley (10) and Leong (12) and Lieut. Browning Paterson (13), up with Baumann, also Mr. H. Keating taking extra practice (10), up with Baumann. During evening school Mr. Watts took up one lady and one gentleman passenger.

Friday, Messrs. Roche Kelly (12), Leong (10) up with Baumann and in the evening Ruffy (5) up with Baumann.

Saturday, Lieut. Browning Paterson (9) and Mr. Leong (5) up with Watts and Lieut. Maguire (12), and Messrs. Ruffy (7) and Bentley (12) up with Baumann.

British Caudron School.—Monday last week, school out at 4.30 a.m. under the instruction of R. Desoutter. Messrs. Valazzi and Abbott doing straights. Mr. Cornier rolling and straights. R. Desoutter flight of 15 mins. on 35 h.p., reaching to a height of 500 ft. R. Desoutter two flights on 60 h.p., reaching to a height of 600 ft.

Tuesday, school at 4.30 a.m. under instruction of R. Desoutter. R. Desoutter test flight. Messrs. Abbott and Valazzi very good straight flights at 15 ft. up. Mr. Cornier on 35 h.p. R. Desoutter 10 mins. flight on 35 h.p., reaching to a height of 600 ft.

Tuesday evening, R. Desoutter on 60 h.p. for 20 mins. reaching to a height of 1,000 ft. Mr. Cornier passenger flight.

Wednesday, school at 5 a.m., Messrs. Abbott, Valazzi and Cornier doing straight flights. R. Desoutter test flight, afterwards passenger flights to pupils on 60 h.p.

Thursday, out at 5 a.m., under instruction of R. Desoutter and R. M. Murray. Test flight by R. Desoutter. Mrs. Buller 15 mins. flight, reaching to a height of 700 ft. Messrs. Abbott, Cornier and Murray doing straights. R. Desoutter flight.

Friday, school at 5 a.m., under instruction of R. Desoutter and R. M. Murray. R. Desoutter test flight. Mr. Murray doing straights. Messrs. Abbott and Cornier half circuits.

Saturday, school out at 5.30 a.m., Instructors as before. R. Desoutter test flight. Mrs. Buller 15 mins. flight, reaching to a height of 600 ft.

Hall School.—Instructors during last week, Messrs. Clappen and Virgilio. On Monday the following pupils were out morning and evening: Miss Clifford five straights, Messrs. Rose, Gibson and Haines two each on No. 2 Caudron.

Tuesday, Mr. Arcier did three circuits at 200 ft. on No. 1 Caudron. In the evening Mr. Gibson was out doing straights on No. 2.

Thursday, pupils out morning and evening, Miss Clifford, Messrs. Rose, Gibson, Charig, Haines and Scott, six straights each on No. 2. Messrs. Gering and Brookes four circuits each on No. 1.

Friday, Miss Clifford, Messrs. Rose, Charig, Haines and Scott two straights each on No. 2. Messrs. Gering and Brookes four and two circuits respectively on No. 1.

Shoreham Aerodrome.

Pashley School.—Instructors last week: C. L. and E. C. Pashley. Up with instructors, E. P. Roberts and H. Pashley. Circuits and eights, W. Mortimer. B. F. Hale (late pupil) made several flights on Tuesday, these being his bonus flights for passing his certificate without a breakage.

FLYING AT SHOREHAM.

A WIND of from 40 to 45 m.p.h. velocity somewhat marred the Second Summer Meeting of the Brighton-Shoreham Aerodrome last Saturday, in that the 12-mile speed contest for the Shoreham Cup (presented by Mr. G. S. Howell) and cash prize (presented by the directors of the aerodrome) had to be abandoned. G. M. Dyott, who is well known to our readers, was also unable to give the special flying exhibition flights on his 50 h.p. Dyott monoplane as had been arranged. However, the large attendance of visitors were not disappointed, as they saw a very fine display of flying by Eric Pashley on the new 50 h.p. Pashley biplane, when he put up a magnificent fight against the wind. Flying head to wind, at times the machine hardly moved at all, whilst when he turned and flew with the wind he went at a terrific speed. He repeated this performance several times, and on each occasion his landings were quite exciting and well made. Amongst the visitors may be mentioned Lord and Lady Brassey, the Mayor of Hove (Alderman Leeney, J.P.), and Lieut. Littleton of the Royal Naval Air Service. The latter had flown over on the Wednesday previous from Eastbourne on a 50 h.p. Avro whilst proceeding to Spithead, and was compelled to land at Shoreham on account of the strong wind. When starting to continue his journey the next day he damaged his machine, and so had to prolong his stay at Shoreham.

Sunday turned out to be a much better day, and a splendid show of flying was put up. There was an exceedingly gratifying attend-

ance, which included several notabilities from Stageland—Brighton and Shoreham being, of course, two of their favourite haunts. Both Eric and Cecil Pashley made several exhibition and passenger flights on their biplanes, Eric Pashley putting up a good show on the new Pashley biplane. A friendly speed contest was flown between Cecil Pashley and W. H. Elliott, the former on the Pashley-Farman and the latter on a similar machine. The course was over a distance of six miles, and Elliott received a start of 17½ secs. Both pilots flew a very good race, Pashley winning by 17 secs. G. M. Dyott gave a demonstration of speed-flying on his monoplane, which formed an interesting contrast to the comparatively slower biplanes. The winner of a ballot for a free flight, Miss Sylvia Lee, was duly given her "joy ride." On both the Saturday and the Sunday the Brighton Railway Military Band gave an excellent programme of music. The "Blériot Day" meeting will be held to-morrow (Saturday), and the principal event will consist of a speed race for a trophy and cash prize presented by the Brighton and Hove hotel proprietors. M. Blériot is also giving prizes, consisting of a bust of himself, a model of the first aeroplane to cross the Channel, and a pair of Blériot lamps. Another event will be a bomb-dropping contest for a prize presented by Miss Kate Carney.

Special displays will also be given on the Sunday following by the Shoreham aviators, including G. M. Dyott.

EDDIES.

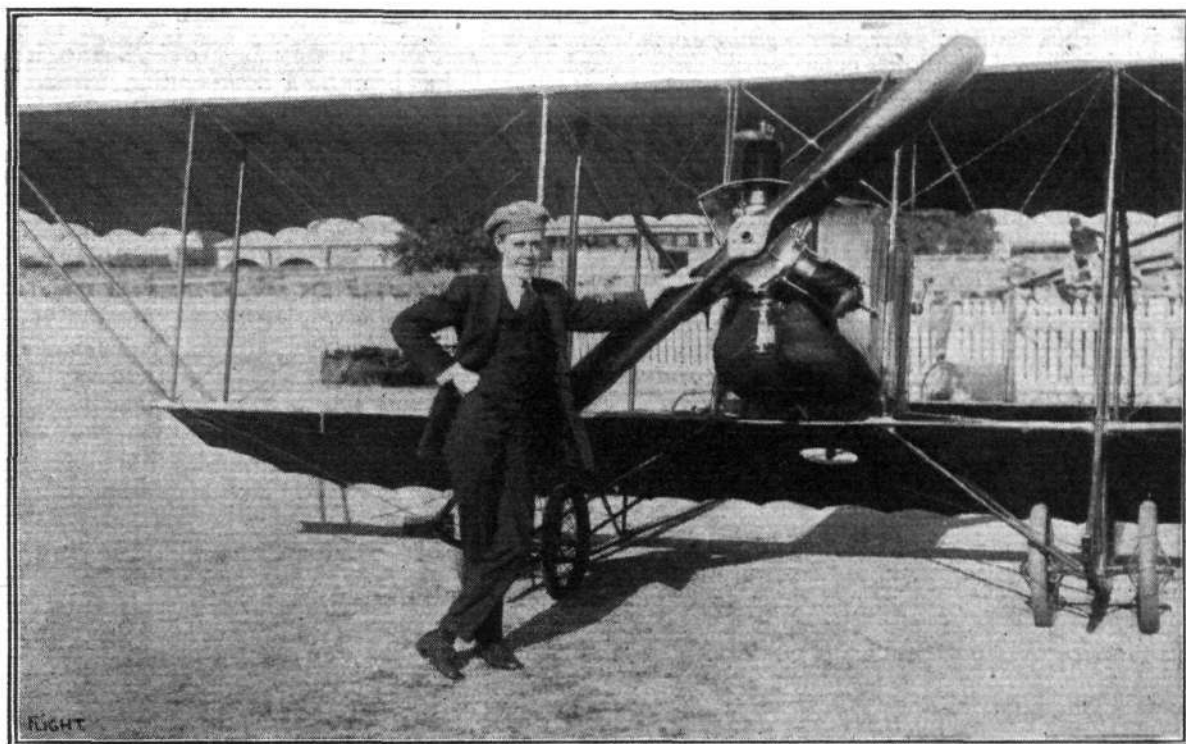
BEATTY is blossoming out as an engine designer. He has been engaged for some time past on a 90 h.p. 8-cylinder water-cooled vee engine, embodying several very interesting features. The cylinders are mounted upon a one-piece aluminium crankcase, suitable openings being provided for the placing of the crankshaft, which, by the way, is solid, in position. The inlet valves are of the automatic type. No carburettor is employed, but the fuel is injected into the inlet manifold of each set of four cylinders by two separate petrol pumps in a manner reminiscent of the old Wright system, and the engine control is effected in a peculiar fashion. The control lever operates over an arc of approximately 180 deg., divided into three parts of about 60 deg. each. A special Bosch magneto is fitted with a 60 deg. variation in timing, and when the control lever is at the extreme end of the quadrant, the engine is working at full power, with the ignition fully advanced. By retarding the spark through the full 60 deg., a wide variation in power output is obtained, but when this point is reached, the ignition of the charge in one set of cylinders is cut out, and during the next 60 deg. the exhaust valves in that set are raised and the petrol injection pump is put out of action, so that the remaining set of cylinders is operating alone on a retarded spark. Further movement of the control lever cuts out the ignition for this latter set, raises

the exhaust valves and disengages the fuel pump, so that when the back end of the quadrant is reached, the engine is running quite freely.

The various parts are now under manufacture by specialists in the individual classes of work, and when completed they will be assembled at Hendon. The estimated weight per h.p., including radiator, is 4 lbs.

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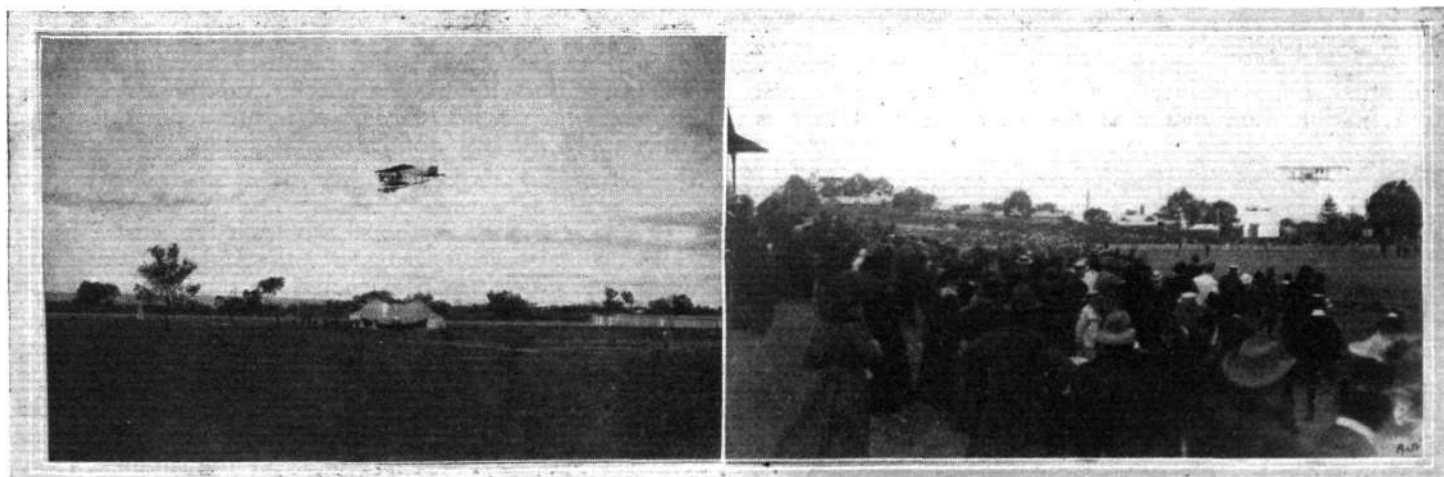
Mr. J. J. Morgan, manager for Mr. A. W. Jones, who



Mr. A. W. Jones and his Anzani-Caudron in South Australia.

took a British-built Caudron biplane, 35 h.p. Anzani engine, out to Australia, where Mr. Jones has been flying it for about eighteen months, sends us the following interesting communication:—

“When being shipped from London the machine was badly smashed, and had to be practically rebuilt on arrival at Brisbane, Queensland. Since then Mr. Jones has given exhibitions at all the principal towns in Queensland, N.S.W. and South Australia. One of his best flights was made in South Australia on January 2nd of this year, when he flew over Adelaide at a height of 3,500 ft.,



MR. A. W. JONES FLYING HIS ANZANI-CAUDRON IN AUSTRALIA.—On the left at Cheltenham Race Course, Adelaide, South Australia; on the right at Perth Oval, Western Australia.

covering about 20 miles. He is practically the pioneer of aviation in Australia, as outside of Sydney and Melbourne there had not been any flying at all. We have found great difficulty in securing grounds especially in such out-back places as Charters Towers (North Queensland) and Broken Hill (N.S.W.). The temperature at the latter was 115 degrees, rather trying for an air-cooled engine. The Caudron has covered in all about 3,000 miles in Australia, and has proved itself ideal for flying, its one great drawback for exhibition work being the cost of transport; in a country like this, where you have to travel thousands of miles, it costs a small fortune in freight. The little 35 h.p. Anzani has done exceptionally well, not having given the slightest trouble till we came to Perth a week or so ago, when we were unable to get the right lubricating oil. No doubt the weight of the pilot (9 stone) has something to do with its success. Perhaps these notes and photo. may be of use to you, and I may state that I have come across your paper in all sorts of out-back places in Australia. Mr. Jones is giving exhibitions in Perth and Kalgoorlie and other towns in this state."

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By flying from Brooklands to the Brighton-Shoreham aerodrome on Saturday week in order to compete in the speed event in the afternoon, Jack Alcock added a little bit more to the steadily growing tale of cross-



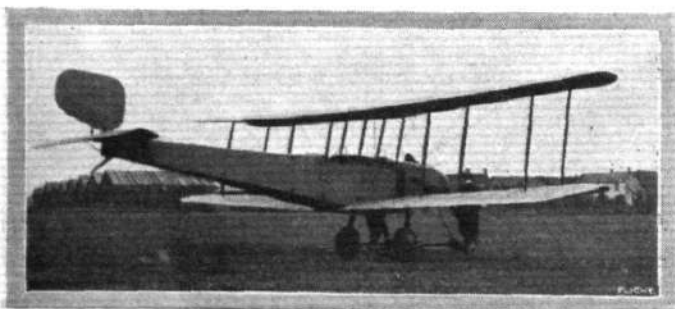
"Flight" Copyright.

Jack Alcock in the pilot's seat of his M. Farman biplane, 100 h.p. Sunbeam engine, at the Shoreham Aerodrome.

country flying on his Maurice Farman biplane with 100 h.p. Sunbeam engine. It may not be generally realised that the mileage is now somewhere in the neighbourhood of 30,000 miles, an excellent record for pilot as well as both aeroplane and engine. The little jaunt from Brooklands to Brighton with a passenger was made in just over half an hour.

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That the aeroplane constructors who have entered machines for the Circuit of Britain are very busy just now getting their machines ready for the great race is



The graceful 80 h.p. Clerget-engined "Bristol" biplane at Brooklands purchased by Mr. Richard P. Creagh.

hardly surprising. The Beardmore biplane is rapidly nearing completion, 20 mechanics working on it night and day, in addition to the ordinary staff, and the trial flights are expected to take place at Southampton Water by the end of this month. I understand that Lieut. Collet, R.M.A., whose masterful handling of the D.F.W. biplane at Brooklands and elsewhere will be remembered by our readers, will pilot the Beardmore biplane. The biplane entered by the Grahame-White Aviation Co. is also practically finished, and will probably be taken down to Southampton Water in the course of a day or two to be tested over the sea.

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Mr. Howard L. Flanders, who, it will be remembered, has been on a recuperation trip to such corners of the British Empire as Australia, New Zealand, the Fiji Islands and South Africa, returned to this country on Tuesday of last week, and on the following Friday he was at Brooklands, where he indulged in a flight with Mr. Barnwell on the Vickers gun-carrying biplane. Mr. Flanders has returned in better health than he has enjoyed for years, and as he had strict orders from his doctors not to read any aeronautical papers whatever he was naturally eager to put himself in touch with the progress that has been made during his absence. It will be remembered that Mr. Flanders started on his trip just about a year ago, and had therefore never seen such machines as the Bristol and Sopwith scouts or the new 80 h.p. Avro, to mention just a few of the new types which have been evolved since he left these shores.



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Although under doctor's orders in no way to allow his mind to be obsessed with matters aeronautical, I am afraid that Mr. Flanders has hardly succeeded in keeping his thoughts so entirely away from this, to him, almost vital subject, and I have a grave suspicion that, injunctions or no injunctions, Mr. Flanders has employed at least part of his leisure in thinking out the design of a new machine. I hope to hear of him very shortly in association with one of our aeronautical firms.

Mr. Howard L. Flanders pays his first visit to Brooklands after his return to England.

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In the imposing shed specially built for it at Brooklands, is now being erected the huge Martinsyde monoplane which was constructed for the Trans-Atlantic flight, and which was to have been piloted by the late Gustav Hamel. Although no information is at present available as to the future of this machine, I gather that it is intended to try the monoplane at Brooklands as soon as she is finished, which is expected to be in about six weeks' time. The landing chassis will be of the simplest type, and will be rigid except for the large Palmer cord tyres which will be fitted. Whilst busily engaged on the con-

struction of this special machine, the Martinsyde firm have not lost sight of the advisability of aeroplanes for more general purposes, for a tractor biplane of the small fast scouting type is now in the course of building at their Brooklands works. In its general lines the Martinsyde scout will follow more or less standard practice, but a considerable amount of originality is displayed in the details. Needless to say, throughout both the small scout and the large monoplane are well up to the high standard which has always been maintained by the Martinsyde firm.

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An amusing incident occurred at the Newbold Revel, near Rugby, where Mr. Manton was giving exhibitions of looping last week. Mr. Ivan B. Hart-Davies, who, it



A leaf from Marcus Manton's autograph book.

will be remembered, obtained his pilot's certificate at the Graham - White school some time ago under the instruction of Mr. Manton, was in charge of a company of Boy Scouts, and had occasion to give certain imperative orders to some of the boys. This rather insensed one of the spectators, who called out "Instead of sittin darn their making a noise, why dust-na-tha git up in the air and do what 'e is

doing." Mr. Hart-Davies at once jumped up, walked towards the man and asked him to repeat his question. Much to the astonishment of the interrupter he then pulled out his pocket book and produced his pilot's certificate. It was then Mr. Davies' turn to smile, whilst the abashed spectator sought obscurity in the crowd.

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From Lord Carbery I learn that the reason for his coming down in the Channel during the London-Paris-London race was that before the start from Buc only one of the two tanks with which the machine had been fitted, in order to enable a non-stop flight between London and Paris to be made, had been filled, and that he therefore ran out of petrol when over the Channel. Fortunately, as our readers already know, he was picked up by a passing steamer. The machine was kept afloat for some little time by the empty petrol tank, and Lord Carbery did not even get a wetting. It was found impossible to get the machine on board intact, so the wings were sawn off, and only the engine and front portion of the fuselage were saved.

An explanation is also to hand from a correspondent as to why, in starting from Hendon for Paris, Lord Carbery got off in a shaky manner, as described in our report. It appears that, as he was getting into the machine prior to the start, Lord Carbery accidentally bent his throttle lever, which thus worked loosely. Having noticed this, he managed to bend it back to its

original position whilst getting off, thereby reducing the danger of engine trouble later on, but sacrificing to a certain extent the gracefulness of his get-away.

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Mr. B. C. Hucks' method of obtaining a revenue from Scarborough visitors who last week watched his flights over the seafronts for nothing, was quite a novel one. An aviation button had been prepared, and these were sold at 6d., and the idea caught on so quickly that the person without a button hardly dared to show himself when Mr. Hucks was flying. To stimulate business one day, Mr. Hucks went round on his car with a box of buttons, and offered them for sale himself. Two ladies refused point blank to buy a button because they thought Mr. Hucks was an imposter. Fortunately Mr. Hucks had a postcard of himself which he produced. This was carefully compared with the original, and when the doubters were finally convinced they expressed their contrition by buying a dozen buttons each.

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During the week Mr. Hucks was asked to present the prizes at the annual sports of a Girls' School. Not only did he do this, but he participated in a tug-of-war composed of men against a team of girls—and Mr. Hucks' team lost. He says he is going to stick to flying in the future.

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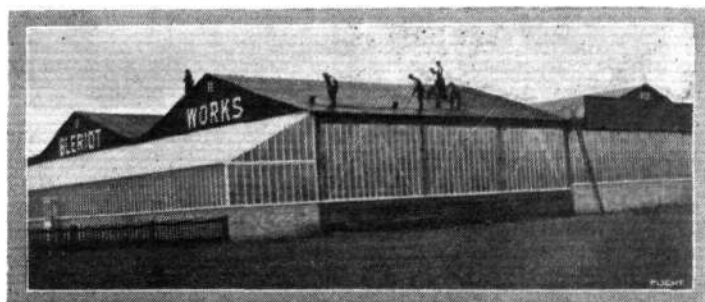
Many of my readers will recall that Mr. Hucks was the first airman to fly over Scarborough. This was during his 'prentice days at Filey, when he taught himself to fly on a Blackburn monoplane. Thinking he would like to revisit the scene of his early efforts, he flew over from Scarborough one afternoon last week with a passenger in his 80 h.p. Blériot and had tea in the hangar on the sands, returning to Scarborough in time to give his evening demonstration of looping.

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At one of the towns where Mr. Hucks has recently been giving demonstrations, the winner of the height estimating competition got within two feet of the actual altitude reached. Mr. Hucks was rather interested to know how the young man came to guess so accurately, so after presenting the prize he asked him to give him the secret. "To tell you the truth," said the youth, "I did not guess at all. I put down my father's telephone number!"

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Mr. Hall's 50 h.p. Avro biplane, after having been thoroughly overhauled, has put up some very good performances lately. On July 14th, for instance, he made the trip from Shoreham to Hendon in 45 minutes, accompanied by a lady passenger, Miss Louise Elliott,



A nice cool job in the July sun at Brooklands. Painting the roof of the Blériot works.

from whose pen there appears this week an account of her impressions and a well-deserved tribute to Mr. Hall's skill. During his recent stay at Shoreham, Hall flew from Worthing to Shoreham, a distance of nearly five miles in 2½ minutes. True, this flight was accomplished with a following wind, but even so the performance was a very good one.

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I am glad to see that George Prensier has now almost entirely recovered from the nasty accident he had some time back whilst testing his new type life-saving parachute apparatus—which, Irish like, nearly killed its inventor—from a motor car. It should be noted, however, that the accident was not due to any fault of the apparatus, which, as a matter of fact, worked better than anticipated—but before Mr. Prensier was ready. During his enforced stay in hospital, Mr. Prensier has thought out one or two little improvements which should add still further to its efficiency.

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The ill-luck which pursued Mr. Louis Noel during the recent London-Paris-London race did not by any means end when he had managed to land on the cliffs, after being obliged to return on account of a leaky tank, for he was then confronted by the problem of how to get his

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THE ROUND-THE-WORLD RACE.

IN our issue of February 7th this year, we published, it will be remembered, a sketch map showing the proposed route for the Round-the-World flight organised by the Panama Pacific International Exposition of San Francisco. From Mr. Arnold Kruckman, Chief of the Bureau of Aeronautics at the Exposition, who is at present in this country making arrangements for the patrolling and for stationing supplies along the route, we have received some details as to the arrangements which have been made.

The event will be an open international race, and is to be known as the Panama Pacific International Exposition Round-the-World Aerial Race. The Exposition authorities will pay as capital prizes \$150,000 to the first three competitors to complete the course round the world within 121 days, San Francisco time. The capital prizes will be distributed as follows: 1st prize, \$100,000 to the competitor finishing first; 2nd prize, \$30,000, to the competitor finishing second; 3rd prize, \$20,000, to the competitor finishing third. It is intended to make an effort to obtain from cities and individuals an auxiliary prize fund of \$150,000, to be awarded to competitors in addition to the \$150,000 capital prize fund.

As all the auxiliary prizes have not been obtained yet, the regulations for the distribution of these have not been decided on, and Mr. Kruckman would appreciate any suggestions as to the best method of distributing these prizes among the competitors. It is intended to start the race from the Panama Pacific International Exposition Grounds, San Francisco, California, U.S.A., on May 15th, 1915, and the race must be completed before 12 o'clock noon, December 4th, 1915—San Francisco time. Subjects or citizens of either sex, and of any country or race, will be allowed to participate as either entrants or pilots, but each pilot must hold a pilot's certificate issued by some organisation or club affiliated to the International Aeronautic Federation.

Aeroplanes, dirigible balloons, or any other kind of motor-driven aircraft of any size or category may be used, and at any control the competitor may leave the aircraft previously used and resume his flight in another aircraft, which, however, must be of the same class as that in which he started; that is to say, if he starts in an aeroplane he must use an aeroplane throughout the race. Competitors may carry passengers, and are allowed to change same *en route*, and also to increase or reduce the number of passengers, but the pilot must be in control of the aircraft at all the starts from and alightings at the various controls.

In case the first competitor fails to finish within 121 days, but does finish on or before December 4th, 1915, the first prize shall be reduced by \$1,000 per day for each day over 121 required to finish. The second prize shall be similarly reduced by \$300 for each additional day, and the third prize by \$200 for each additional day.

If no competitor succeeds in traversing in flight the entire course, but one or more of them do complete in flight all of the course overland, and have their aircraft transported across the Atlantic and Pacific Oceans, from the first prize there will be

machine to the nearest railway station, which was about eight miles away. Leaving his Morane in care of a shepherd, Noel wended his way to a neighbouring golf course in the hope of finding somebody there willing to give him a hand. On arriving at the club he obtained permission to use the 'phone for the purpose of letting the Grahame-White Aviation Co. know his whereabouts. Later he related his experiences, and explained to some of the members the difficulties of transporting his machine to the station, secretly hoping that someone would offer to tow it behind a motor. But his desires were not understood, and no response was forthcoming. Evidently in that part of the country there is not much sympathy to be expected from golfers by a brother sportsman who has got stymied in his own particular line. Noel then had a little lunch at the Club, during which he made up his mind that the only way out of it must be a pushing job. So it came about that he set his teeth and trundled his mount, assisted by a couple of onlookers, over eight wearisome miles of country road in the glaring sun to the railway station. The tale of that tramp should make interesting reading, but it is to be feared that Noel's thoughts would scarcely bear publication. As to his words—well, French is a pretty language. "ÆOLUS."

deducted \$20, from the second prize \$6 and from the third prize \$4 for each nautical mile not traversed in flight.

Competitors are allowed to make repairs to their aircraft between any two controls, even to the extent of fitting new engines, but at least five parts of the aircraft proper will be stamped before leaving each control, and at least two marked parts must be in place on arrival at the next control.

Entries will be received any time between 12 o'clock noon, November 1st, 1914, and 12 o'clock noon, May 9th, 1915, and should be made in writing, and addressed to Chief Bureau of Aeronautics, Panama Pacific Exposition, San Francisco, California, U.S.A. An entrance fee of \$500 must accompany each entry. The entrance fees of all entrants declared admissible will be turned over to the Pacific Aero Club, San Francisco, and used by that club in defraying necessary expenses in connection with the race.

Mr. A. Kruckman says that very elaborate preparations are being made in connection with the organisation of the race. Steps are being taken to secure the co-operation of the Governments of the various countries traversed, and several have already consented. Special arrangements have been made with American railways for the transport of competitors' machines to and from San Francisco at a reduced rate. Special maps are being prepared, and every effort has been made to help competitors to find their way across the American Continent. The sleepers will be whitewashed for a distance of a couple of miles at junctions where two railways meet, in order to indicate to the pilot which track to follow. The control stations will be situated some 300 miles apart, but petrol, oil, and other supplies will be provided between the controls along certain routes which will be indicated later. Mr. Kruckman further states that huge supplies of petrol, oil and other spare parts are being despatched to Labrador, Greenland and Iceland, and that the open stretches of sea between these places will be patrolled by warships of different nationalities. The portion of the course traversing Russia and Siberia is to be patrolled by Russian militia, and depôts of supplies will be stationed at frequent intervals along the route. On the whole, it would appear that the race is being thoroughly well organised, and in view of the recent performances of duration flights, it should be possible by next year to have machines capable of traversing the distances necessary in this round-the-world race.

Some misunderstanding appears to have arisen between the organisers of the race and the Aero Club of America, which is the American body recognised by the F.A.I., due to the fact that the prize money has been deposited in a San Francisco bank, but that this bank has not sent a formal agreement to make the prize money payable to the persons declared by the Aero Club of America to be the winners of the race. It is hoped, however, that this matter will be settled to the satisfaction of all concerned, as it would be impossible to hold the race without the sanction of the American Aero Club, since all competitors would be automatically disqualified under the regulations of the International Federation.

OUR NAVY PLANES AT THE SPITHEAD REVIEW.

FOR the first time in the history of the British Navy a special place was reserved for seaplanes in the anchorage arrangements at Spithead for the Naval review or mobilisation which took place last week-end, and aircraft generally played a most important part in the operations. During the previous week several flights of machines assembled at Calshot, including one from the Isle of Grain, another from Dundee, a third from Felixstowe, and another from Yarmouth, in addition to the equipment at the Calshot station. As the accommodation at the station is limited, most of the visiting machines were housed in large Piggott marquees. There were also several land machines from the Naval Flying School, Eastchurch, temporarily encamped at Hilsa.

On Saturday morning, according to the programme, the seaplanes had to be flown over to the special moorings which had been laid down for them, off Fort Monckton, in the entrance of Portsmouth Harbour, in order to be in position for the review. The Isle of Grain flight, composed of 160 h.p. Gnome-Shorts, under Squadron-Commander Seddon, led the way at 5.30 a.m. It was followed by the Dundee flight of 100 h.p. Gnome-Short tractors, under Squadron-Commander Gordon, the M. Farmans—three with 100 h.p. 12-cylinder Renaults and one with 130 h.p. Salmson motors—from Felixstowe led by Squadron-Commander Risk and the 120 h.p. Gnome-H. Farmans from Yarmouth with Squadron-Commander Courtney in charge. The rear was brought up by the Calshot contingent, under Squadron-Commander Longmore, whose machine was, unfortunately, put *hors de combat* at the last moment. It included, however, a 160 h.p. Gnome-Short, a 100 h.p. Green-Sopwith and a Sopwith bat-boat on which Flight-Commander Travers had made a trip over the assembled fleet the previous night. After the machines had been moored the pilots and passengers went on board the gun-boat *Niger*, which was acting as mother ship. It was a disappointment that the King's visit had been postponed, and after an inspection by the First Lord of the Admiralty, who was accompanied by Lord Fisher and Admiral Sir Hedworth Meux, the seaplanes, about 1 p.m., commenced to return to Calshot.

About 5 o'clock His Majesty arrived at Portsmouth, and the Royal yacht was escorted out of the harbour by the *Astra-Torres* and *Parseval* airships, which had arrived not long before, the former from Kingsnorth and the latter from Farnborough, while three aeroplanes and several seaplanes carried out a number of evolutions.

Monday morning opened dismally, after a heavy downpour of rain, but the weather gradually cleared. The turn of the aircraft did not come until the great collection of warships had slowly filed past the Royal yacht, and put to sea. Then on a message by wireless from a M. Farman scout that the last warship had left Spithead, seventeen machines set out in single file to fly from Calshot down to the Royal yacht, on passing which each one dipped, then banked, showing its number, and returned to Calshot. One machine had to alight owing to engine trouble before reaching the Royal yacht, while another on the return trip had to come down owing to a broken petrol pipe; both were towed in by torpedo boats.

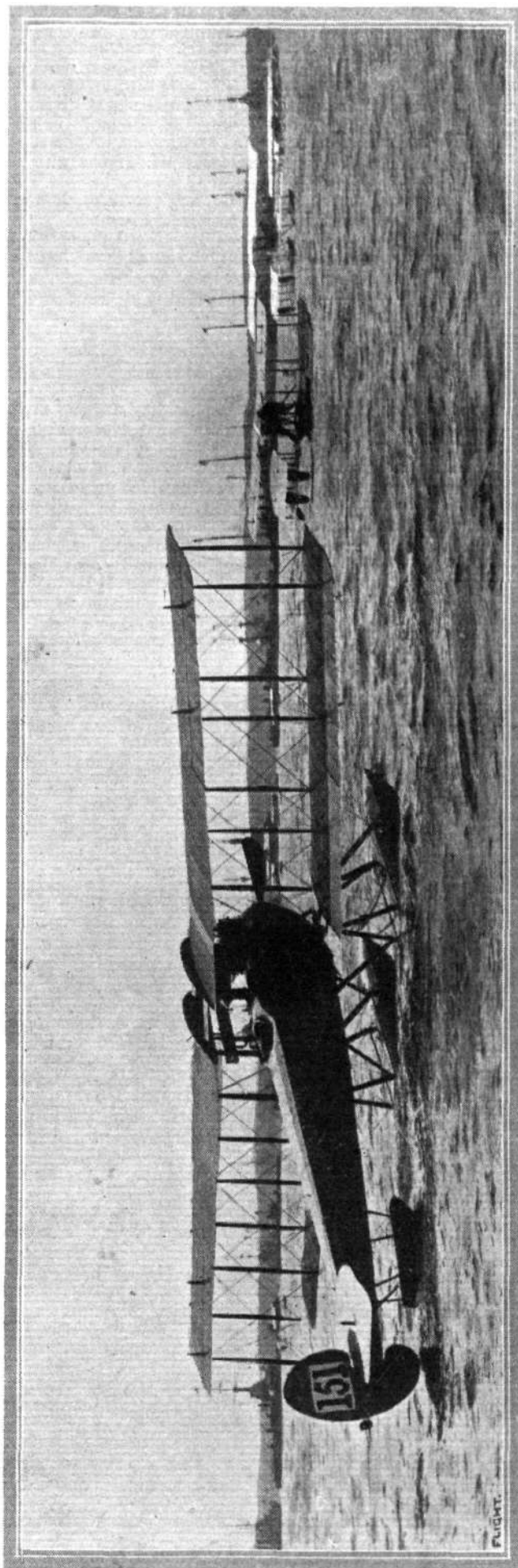
The machines which took part in the "fly past" were three of the big 160 h.p. Gnome-Short machines, which have wings capable of being folded back when at rest, four of the 100 h.p. Gnome-Short tractors, four of the 100 h.p. Gnome-Henry Farmans, three 100 h.p. Maurice Farmans, the Sopwith tractor, with its 100 h.p. Green engine, and the Sopwith batboat, which has a 90 h.p. Austro-Daimler motor.

After this there was a demonstration by three of the land machines from Eastchurch, an 80 h.p. Sopwith and a couple of B.E.s. They came up in the form of a V, and then Commander Samson, on one of the B.E.s, made some spiral flights which were closely watched by His Majesty. Commander Samson's machine was rejoined by the other two, and they flew off in company just as another trio, composed of an 80 h.p. Bristol, a 50 h.p. Avro and a 50 h.p. Short, came out and flew round and over the "Victoria and Albert" for some time.



Report of the Advisory Committee for 1913-14.

THIS report has been issued in the form of a White Paper. The Technical Reports have not been included, but they will be issued later in volume form. Considerable attention has evidently been directed to the problem of stability during the past year, especially as regards the application of an extension of the mathematical analysis given in last year's report to the determination of the disturbed motion of an aeroplane. Tests have also been made on aerofoils (one set of experiments were carried out on a wing of which the section could be varied during flight by the rotation of the rear portion), propellers, fabrics and floats, while an account is given of some of the full scale work conducted at the R.A.F.



THE GREAT NAVAL REVIEW AT PORTSMOUTH.—A view of some of the Navy seaplanes at their moorings with the battleships at Spithead, awaiting the King's inspection.

MR. B. C. HUCKS AT SCARBOROUGH.

EVERY day last week except Thursday, Mr. Hucks gave splendid looping demonstrations over the seafront at Scarborough. On several occasions the fog was very bad, and once Mr. Hucks almost grazed the flagstaff of the Grand Hotel. On Tuesday nine army airmen under the command of Major Burke arrived at Scarborough on their way to Montrose, and were held up for a day or two with bad weather. They showed keen interest in Mr. Hucks' evolutions. On Saturday Mr. Hucks landed on the sands in the South Bay, where he was received by the Mayor, who made a congratulatory speech, and afterwards presented Mr. Hucks with a souvenir in the form of a cigar case.

On Wednesday last, when testing his new 60 h.p. Blériot "looper," Mr. Hucks made a chain of 15 successive loops.

The Scarborough Corporation have now commenced the erection of an aerodrome, so that it is evident Mr. Hucks' visit will have a lasting effect. Many thousands of aviation buttons were sold, and Mr. Hucks' flights attracted an enormous number of visitors, who displayed the keenest interest and enthusiasm.

LORD CARBERY IN IRELAND.

DURING the last fortnight Lord Carbery has been giving several exhibitions in Ireland on his 80 h.p. Morane-Saulnier. On Wednesday, the 15th inst., he was at Waterford in connection with the Agricultural Show there. The wind was rather troublesome, but he nevertheless put up several displays of looping, turnovers, tail slides, &c., with and without passengers. The next evening, Thursday, he repeated his demonstrations, after which the machine was taken by rail to Woodbrook, Bray, where he gave his next round of exhibitions on Saturday last. Ascending early in the afternoon from the Cricket Ground in a series of spirals to a height of 3,000 ft., passing the meanwhile over Bray Head, he executed several loops and tail slides. He then took up several passengers, and caused some alarm by descending in a field outside. His reason for doing this was on account of the Cricket Ground being rather unsuitable for fast

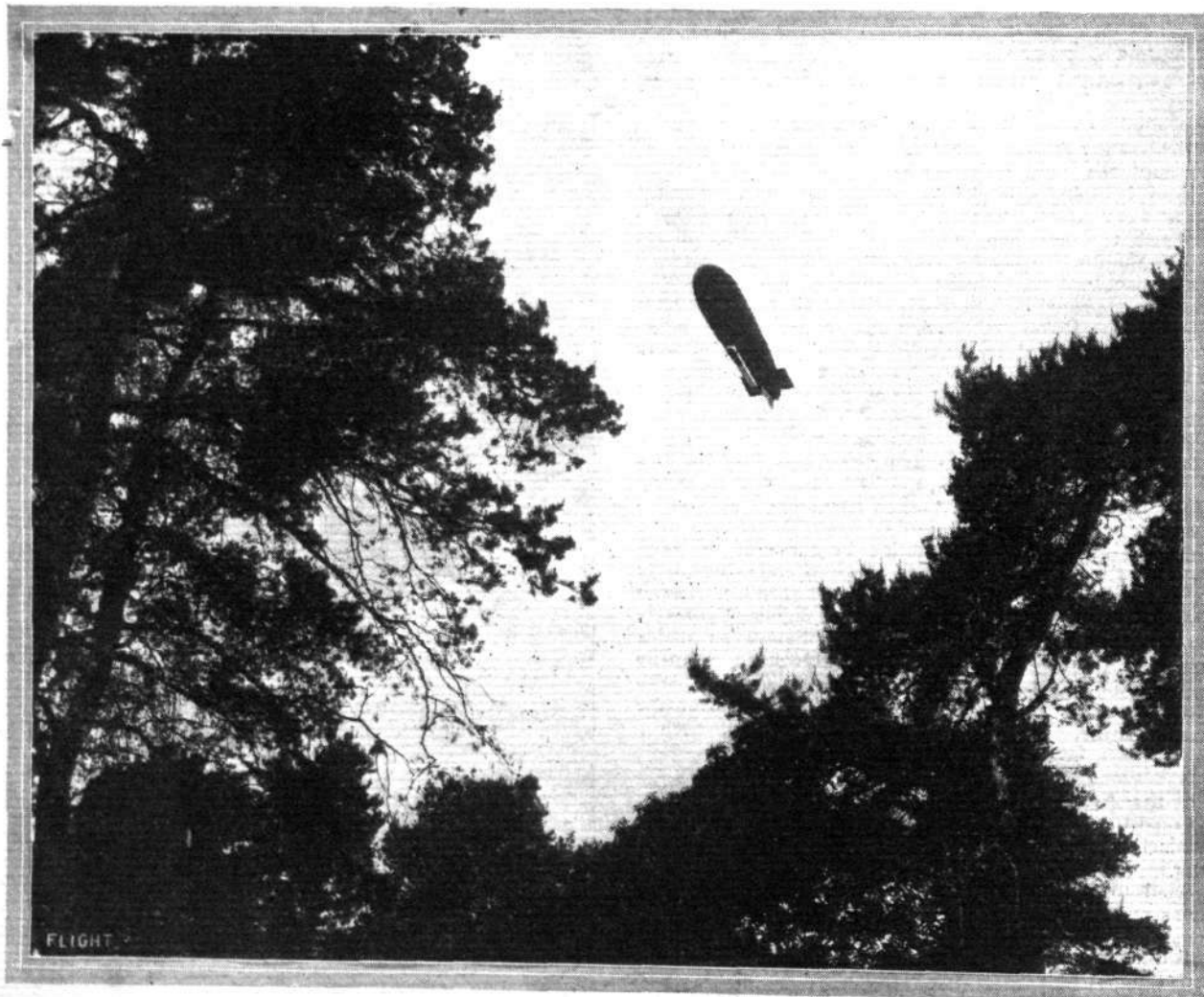
landing, and, moreover, somewhat unpleasantly crowded. He next flew over to Powerscourt, where he was received by Lord and Lady Powerscourt, after which he returned to Woodbrook. In the evening he gave further looping demonstrations, taking with him on one occasion Lady Carbery, who is exceedingly keen on flying, having looped with her husband three times previously in France. Arrangements are being made for further exhibitions in various parts of Ireland.

MR. MANTON AT RUGBY.

IN the grounds of Newbold Revel Hall near Rugby, last Saturday, Mr. Marcus Manton demonstrated aerially for the Monks Kirby Farmers' Club Show, and attracted a record "gate," which included a large contingent from Rugby College. The flying ground was a nice flat patch, but surrounded by numerous trees, and Mr. Manton had to corkscrew his way out with climbing turns to left and right. In the afternoon the loop was duly looped, the bank banked and the steeple chased amid much enthusiasm. During the evening demonstration, whilst Mr. Manton was doing a double loop, the engine spluttered out when the machine was standing on its tail. At once it started to tail slide. The whole machine rattled and wobbled as though it were breaking up, but after falling a considerable distance, a side slip developed and then a nose dive, which was easily corrected.

On Tuesday, this week, Mr. Manton appeared at March in Cambridgeshire, in connection with the Annual Horse Show. The weather was ideal all the morning until the time fixed for the first flight, when the wind rose, and Mr. Manton found it called for fine judgment to get in and out of the long and narrow ground. Five flights were made, and during one he made three loops. During his first flight Mr. Manton noticed an ominous rattle from the neighbourhood of the propeller, and subsequent examination showed that the shield over the engine had cracked. Mr. Manton reports that although the surrounding country is very flat, he noticed there was hardly any ground suitable for landing, owing to the fact that it is all arable and bearing ground crops.

On Saturday he will be at Leagrave near Luton.



The "Gamma" sailing over the trees on its way to Portsmouth.

"Flight" Copyright.

FOREIGN AIRCRAFT NEWS.

More Records by Laporte.

ON his Voisin biplane, fitted with 130 h.p. Salmson-Canton-Unné motor, Laporte beat the records for speed, distance and duration for pilot and two passengers, at St. Petersburg on the 19th inst.

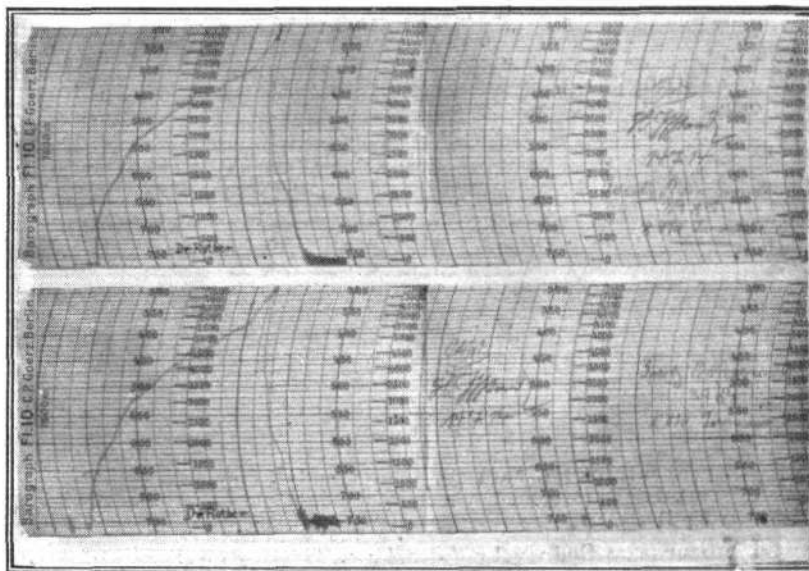
memory of Capt. Ferber, the French pioneer, in the square on the Quai des Brotteaux, at Lyon.

Paris to Pau on a Blériot.

ON his Blériot-Gnome, Lieut. Brule, on the 16th inst., made his return journey from Paris to Pau, the trip taking 7 hrs. Lieut. Brule was again disappointed in not being able to make a non-stop flight, but, as on the outward journey, he found it necessary to land at Poitiers.

Martinet Flying Again.

AFTER enjoying a long rest, Martinet has taken up flying again and returned to his old love, the Henry Farman type of machine. He has just purchased one of the latest models, and last week gave exhibition flights at Nantes and Angers. On the conclusion of his



THE NEW WORLD'S HEIGHT RECORD.—On the left, Oelrich standing by the record-breaking D.F.W. biplane, with its laurels, while on the right is a photograph of the barograph records duly attested.

He flew continuously for 9 hrs. 5 mins., and covered a total distance of 980 kiloms., his average speed working out to 108 kiloms. an hour.

A Japanese Record.

DURING an exhibition of looping, &c., in Japan on the 13th ult. Liger, on his Morane-Saulnier-Gnome went up to a height of 2,300 metres, beating the previous Japanese height record by 600 metres.

A Monument to Capt. Ferber.

UNDER the auspices of the Aero Club du Rhone a movement has been started with the object of erecting a monument to the

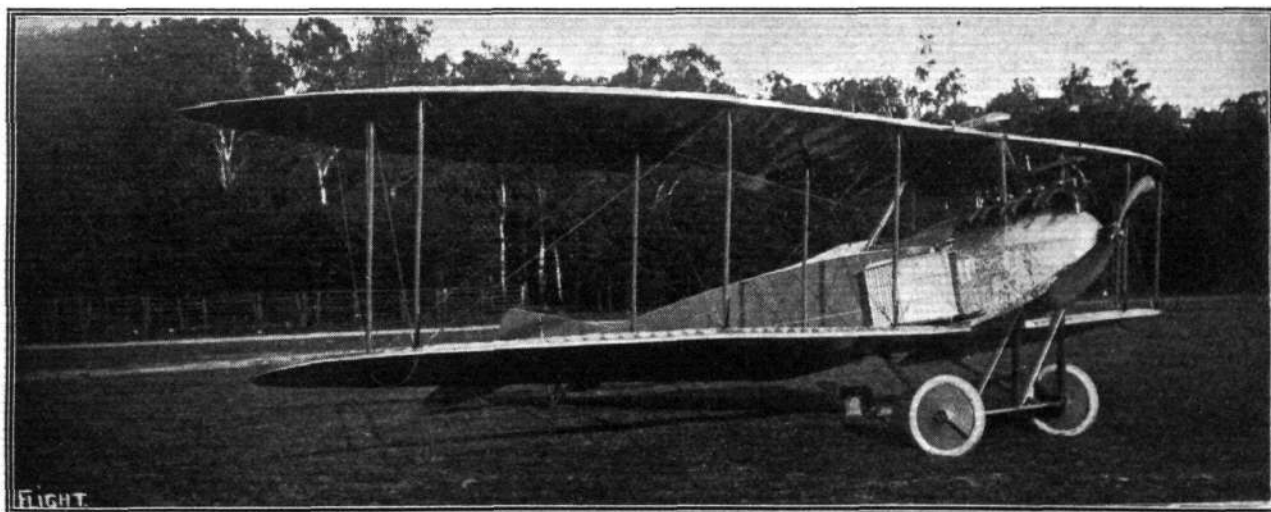
flying at Angers, Martinet flew with a passenger to Buc in two hours.

Nice to Marseilles in Two Hours.

LEAVING Nice at 6 a.m. on the Sunday morning, Maicon on his Caudron waterplane flew to Marseilles in a couple of hours; his average height during the flight was 2,000 metres.

Hirth and Garros Return to Paris.

ON Friday last, Hirth and Garros on their Morane-Saulnier monoplanes flew back to Paris in company. Starting from Hendon after lunch, they landed at Hardelot at 3.10 p.m., and after resting till 4.50 p.m., flew over to Villacoublay in an hour and forty minutes.



The D.F.W. biplane, fitted with 100 h.p. Mercedes engine, on which Oelrich last week beat the world's height record by going up to 7,860 metres.

Naval Aviation in France.

THE necessary credits having been voted, the French Naval authorities are now setting to work to properly organise a Naval Flying Service. It is proposed to proceed very much on the lines of the British Naval Air Service, with a Central Air Office in Paris and various flying stations round the coast. Of the latter the principal one will probably be Frejus, where the aeroplane mother ship "Foudre" is stationed.

An Armoured Farman Biplane.

SEVERAL tests with a new armoured Farman biplane were witnessed at Buc on Sunday last by a deputation of French military officers. Fitted with an 80 h.p. V-type motor, the machine climbed 500 metres in 5 mins., carrying pilot and passenger and four hours' supply of fuel, the useful load lifted being 275 kilograms. The machine got off and pulled up in a distance of 60 metres.

Fatal Collision in Germany.

TWO machines collided in mid-air at the Goerries aerodrome on the 15th inst. The pilot of one—Instructor Geignant—was killed on the spot, while the other pilot, Lieut. von der Luehr, died from his injuries two days later.

More German Fatal Accidents.

ON the 16th inst. a biplane piloted by a non-commissioned officer named Wilke, fell at Bohl, near Saarburg. The pilot died shortly afterwards without having regained consciousness.

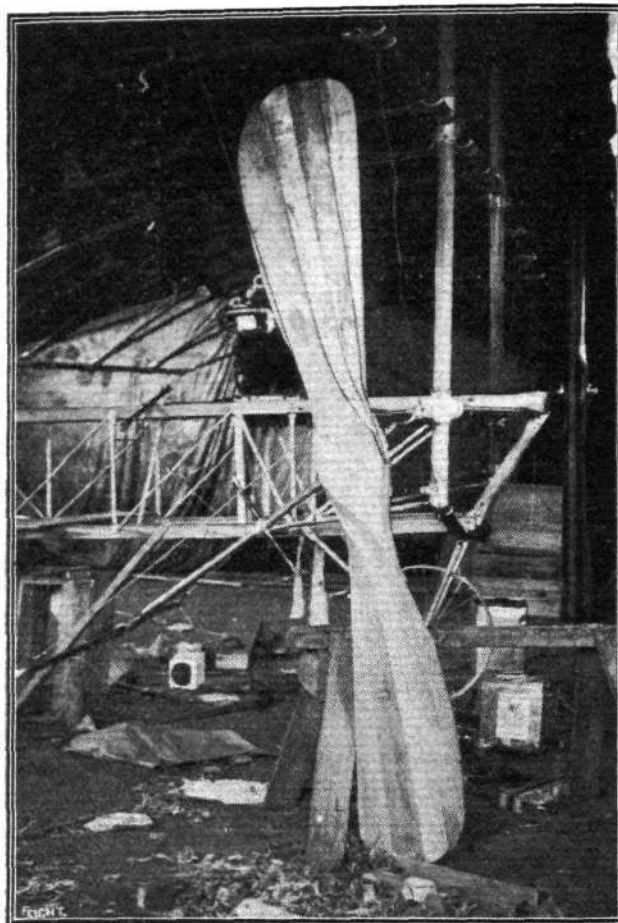
On the 19th inst. a German military biplane fell into the Rhine near Winslaken, and both pilot and passenger were drowned before help could reach them.

The Scandinavian Waterplane Circuit.

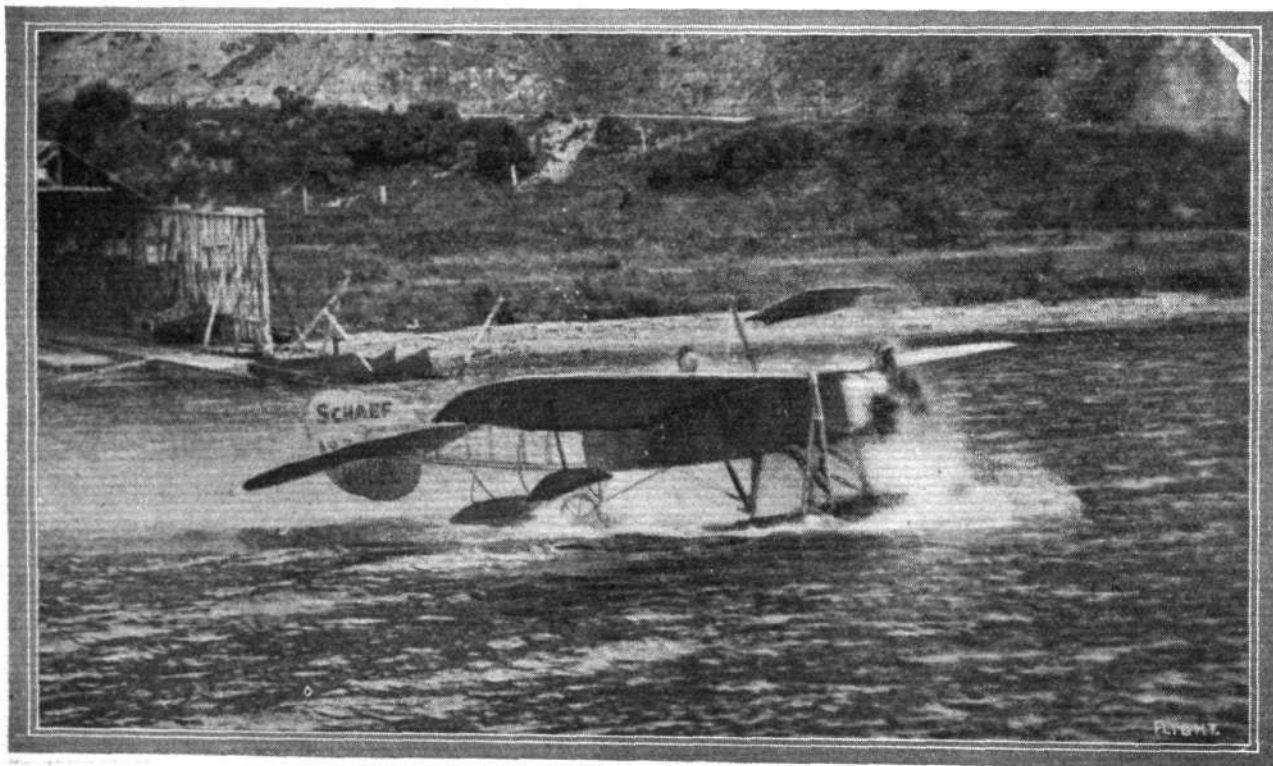
AT the closing of the entry list at single fees on the 15th inst., eighteen entries had been received for the waterplane competition which is to be held from August 21st to 30th over a course starting from Germany and finishing in Norway. The entries are made up of nine Germans, six French, two Swedish and one Italian. They are:—E. Stoeffler (Aviatik), Boutard (M. Beese), Vollmoeller (Brandenburg), Reiterer (Brandenburg), Thelen (Albatros), Böhm (Albatros), Schuler (Ago), Dahm (Gotha), De Waal (Fokker), Debrueres (Morane-Saulnier), Renaux (M. Farman), Fischer (H. Farman), Bill (H. Farman), Chevilliard (H. Farman), Laporte (Voisin), Thulin (Morane-Saulnier), Sunstedt (Flying Boat), Landini (Flying Boat).

Melbourne to Sydney by Aeroplane.

LAST Saturday Guillaux arrived at Sydney, New South Wales, having flown on his Blériot from Melbourne. He, however, took three days for the journey, as he stopped at six of the principal places



AVIATION IN NEW ZEALAND.—A. W. Schaeff's workshop at Wellington, N.Z., where he built his monoplane, No. 1, in 1909, without any knowledge or experience other than that he obtained from the pages of FLIGHT. Our photograph shows the fuselage and landing chassis in its early stage, also the self-made propeller.



AVIATION IN NEW ZEALAND.—A. W. Schaeff on his Anzani-engined Amphibian monoplane (No. 2), which he constructed entirely himself. The photograph shows preliminary tests at Lyall Bay, Wellington, N.Z., in March last year, when it flew about 20 ft. above water for a short stretch.



A photograph typical of the sort of country which has to be flown over in New Zealand, sent to us by Mr. A. W. Schaefer, who is helping so much to push aviation in that country.



Another photograph typical of New Zealand country, sent to us by Mr. Schaefer, incidentally showing the type of conveyance which in time the aeroplane will probably compete against.

en route and made exhibition flights. His actual flying time between the two cities was about 9 hours. Guillaux not only carried a message from the Governor of Victoria to the Governor of New South Wales, but he was also entrusted with a bag of mails. The weather was very unsettled, and Guillaux found flying over the mountains an arduous task.

Double Fatality in Russia.

WHILE flying in the neighbourhood of Odessa on the 16th inst. a machine piloted by Capt. Firsof fell from a great height, and both pilot and passenger were killed.

The Grand Prix Balloon Race.

MORE notable than usual was the start of the annual balloon race for the Grand Prix of the Ae.C.F., from the Tuileries Gardens, on Sunday, for a tablet commemorating the first ascent of a gas balloon from the Tuileries, on December 1st, 1783, was unveiled, while 5,000 carrier pigeons were released. Twenty-three balloons actually started, and owing to the calm weather they disappeared very slowly in a north-westerly direction. One balloon, piloted by M. Blanchet, with M. Duval as passenger, collided with the trees, and the car was torn from the gas-bag. Both the occupants were seriously injured.

The majority of the balloons crossed the Channel, and it is probable that M. Rumpelmayer on the "Sagittaire," who landed near Carnarvon 630 kiloms. from the starting point, will be declared the winner, with M. Demuyter, on "Belgica II," who landed at Abergele, second, and M. L. Gerard on the "Reine Elisabeth," who came down at Towyn, third. The next best performances in order were Herr Henoch ("Barmen"), Welshpool; Herr Apfel ("Leipzig"), Foel; M. J. Dubois ("Touraine"), Aberystwith; Mdlle. Marvingt ("Etoile-Filante"), Aberystwith.

The World's Distance Record for Balloons.

THE F.A.I. has been asked by the German Federation to accept as a world's record, the voyage of Berliner from Bitterfeld to Bissertsk, Perm, in Russia, made last February. The distance is given as 3,052.7 kiloms.

A Zeppelin under Fire.

THE Zeppelin "Z 4," which was concerned in the Luneville "incident" in April of last year, strayed over the Russian frontier on the 14th inst. For the past year or so the dirigible has been stationed at Konigsberg, and on the occasion in question she was making a cruise in the direction of Allenstein. The Russian frontier guards promptly opened fire on the "invader," but the Zeppelin was able to get back without being hit.

22-Hour Cruise over North Sea.

LEAVING Fuhlsbuttel aerodrome, near Hamburg, at 5 a.m. on Friday last, the German naval airship "L 3" cruised to Heligoland, where she arrived at 10.30. She was over Nordeney at 12.15, and then after passing Borkum and Heligoland disappeared westwards. She was next reported at Wilhelmshaven at 2 a.m. on Saturday morning, and eventually returned to her headquarters after being in the air for 22 hours. Throughout her voyage she was in communication with Fuhlsbuttel by wireless telegraphy.

Fatal Parachute Accident at Brussels.

ON Sunday and Monday last a series of exhibition flights, including looping, &c., were given at Brussels by Olieslaegers and Chemet. Mme. Cayat de Castella also made two parachute descents from M. Champel's biplane from a height of 1,000 metres on Sunday, but when she endeavoured to repeat the performance on Tuesday, the parachute failed to open, and she was killed.

THE EVOLUTION OF THE HYDROPLANE.

THE uninitiated frequently confuse the hydroplane with the hydro-aeroplane, the former being a very fast type of motor boat designed to skim the surface of the water, and the latter being, of course, an aeroplane designed for the purpose of alighting on and rising from the water.

As it is necessary for any hydro-aeroplane to acquire its flying speed by driving over the water before it can ascend into the air, the ability to skim the surface of the water—thereby reducing the resistance to motion, and so increasing the speed—is a matter of very great importance.

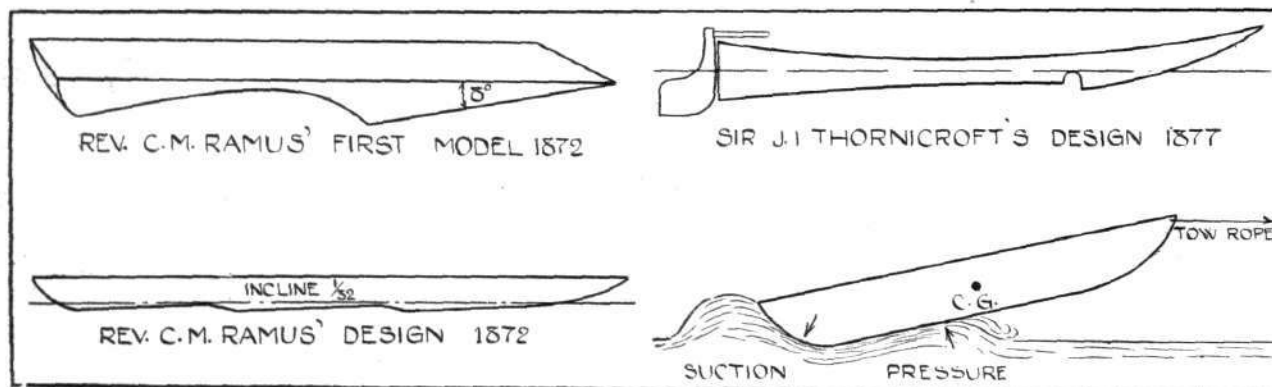
It may be interesting, therefore, to refer quite briefly to the evolution of the hydroplane as a type of boat; for some, at least, of

middle of the boat, where the aft part of the bottom of the boat suddenly commenced on a higher level.

The fore and aft portions of the bottom of the boat thus served as two inclined planes when the boat was in motion, and these tended to lift the boat out of the water on a level keel.

Those who have witnessed modern motor-boat races are very well aware that most of the fast motor boats of the present day have flat bottoms without a step, and it is a characteristic feature of the races that most of these boats go round the course with their bows clear out of the water.

The absence of a step is due to the regulations prohibiting its use in most races that are for motor boats proper, and not for hydro-



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Sketches illustrating the original design for a hydroplane invented by Ramus in 1872. Sir John Thornycroft's design of 1877 is shown, also a diagram illustrating the forces that tend to tip up the bows of a boat that has a round stern.

the floats that have been designed for use on hydro-aeroplanes have been intended to belong to this class of water-craft.

The inventor of the hydroplane was a clergyman, by name the Rev. C. M. Ramus, who in 1872 held the living of Playden, near Rye, in Sussex. In that year he wrote a letter to the Admiralty informing them of certain experiments he had made, which led him to suggest a radical departure from the orthodox design of ships.

The Director of Naval Construction accorded him an interview, and subsequently issued an official memorandum relating to the matter. The hydroplane was described as a ship "formed by two wedge-shaped bodies, one abaft the other."

The essential feature in Mr. Ramus's boat was the presence of what is commonly known as the "step." The bottom of the boat was flat, but constructed on two levels, that is to say the fore part of the bottom of the boat ended abruptly somewhere about the

planes as such. The restriction doubtless originated through the peculiar character of the early hydroplanes, which did not have the sea-going qualities of motor boats, although they were fast enough to win races in smoother waters. Nowadays, however, the hydroplane boat has been developed on much the same lines as the ordinary motor boat.

It is to Sir John Thornycroft that the earlier work in connection with the development of the hydroplane boat is due, but Sir John Thornycroft was also extremely interested in the idea from the time it was put forward by Ramus in 1872. In 1877 Sir John designed his first hydroplane, the outline of which is shown in one of the accompanying sketches.

There is also shown a sketch illustrating the general principle on which a boat, and especially a boat with a rounded stern, has its bows raised out of the water even when towed from a point above and in front of the centre of gravity.

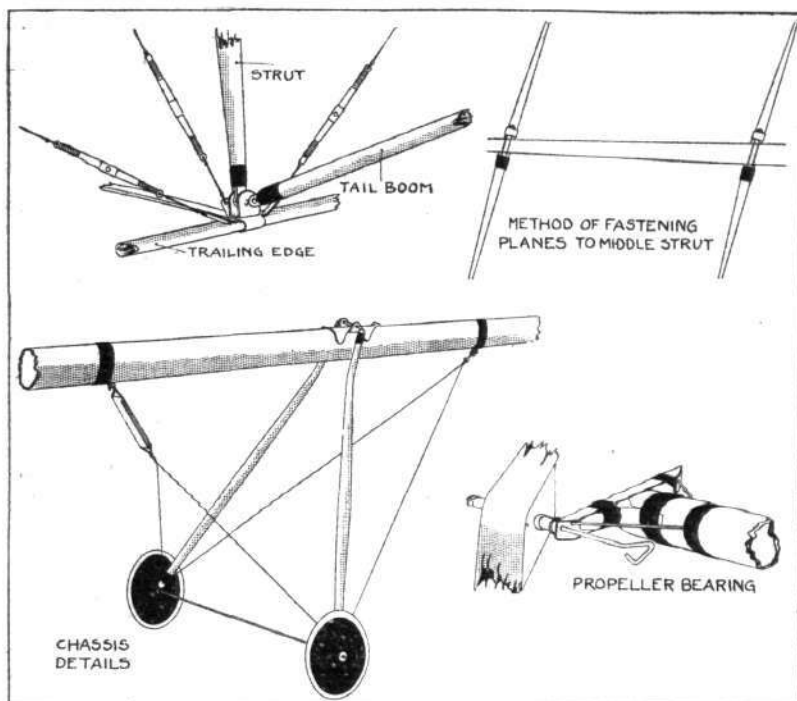
Models

Edited by V. E. JOHNSON, M.A.

Mr. S. Kitchenham's Olympia Model.

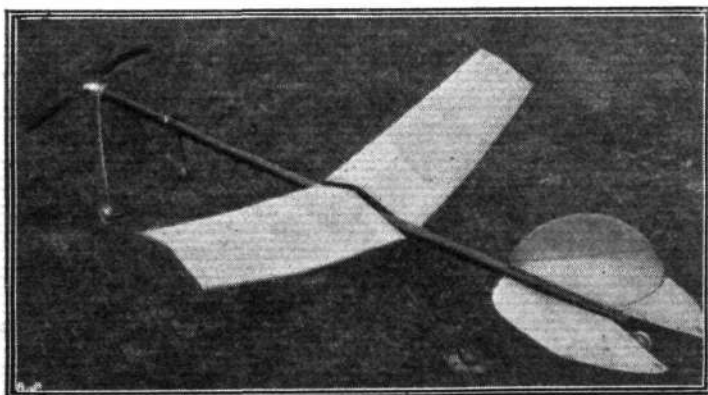
DIMENSIONS of top main plane, 48 ins. by 8 ins., *i.e.*, 384 sq. ins.; bottom main, 32 ins. by 8 ins., *i.e.*, 256 sq. ins.; tail, 78 sq. ins.; rudder, 62 sq. ins.; propeller, 14 ins. in diameter, driven by 12 strands of rubber 44 ins. long; weight of rubber, 2.6 ozs.; total weight of machine, 14 ozs.; loading about 3 ozs. per sq. ft.

"As you will no doubt agree," says Mr. Kitchenham, "I have made a mistake in making the tail so small. The machine is very sluggish in recovery after a dive. I am sending you a sketch of the landing chassis, which I have found very good in actual practice;



Details of Mr. Kitchenham's Olympia model.

the machine is able to land on very rough ground (a potato patch for example) without doing itself any damage. The planes are detachable, being fastened by clips attached to the middle struts. By detaching four of the diagonal bracing wires, the two main planes will fold down quite flat, in fact the whole machine can be packed into a space of 48 ins. by 12 ins. by 3 ins., which is a great convenience when the flying ground is a long way off. The assembling is a matter of about 4 minutes. I did not have an opportunity of trying this model off the ground until the competition at Hendon, when it got off in about twice its own length, but, unfortunately, being under elevated, the flight ended a few yards from the starting point. The best duration to date is 25 secs.



Mr. J. F. L. Corkett's hollow tube tractor model.

A Hollow Tube Tractor. By JOHN F. L. CORKETT.

Having taken great interest in the "war against the non-scientific side of model-aeroplaning," and having incidentally noticed a suggestion in FLIGHT of March 21st, 1914, regarding the hollow tube machine, I have constructed the tractor illustrated in the photograph. A hollow tube was suggested to take the place of the kind of fuselages so common in models, *i.e.*, the single stick, and by so doing (1) improve the appearance of the machine, since the rubber is in this case enclosed; (2) increase the strength of the fuselage, for the strain is evenly divided; (3) decrease wind resistance. The machine was constructed with these theories in view; a hollow tube built up of veneer wood and varnished silk was employed, the tube being purchased from Messrs. W. G. Evans and Sons.

The details of the machine are as follows:—

Fuselage.—Tube 3 ft. 6 ins. in length, inside diameter 0.75 in.; weight 1 oz. 3 drms.

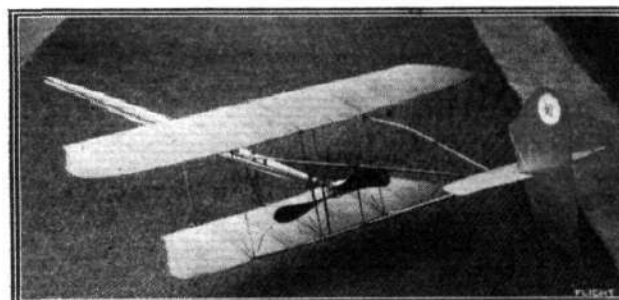
Main plane.—Span 3 ft., chord at centre 7 ins., at tips 3.5 ins., built up with bamboo, and covered with Hart's silk.

Tail.—Of piano wire, semicircular in shape, with flexible tips; diameter 14 ins.

Fin.—To match tail.

Chassis.—Bamboo, V-type, mounted on two aluminium wheels.

Power.—Eleven strands of 1/4-in. strip rubber driving a 12-in. tractor screw.



Mr. Sidney Kitchenham's Olympia model.

The machine rises in about 5 yds. and flies with the tail parallel to the ground, showing very good stability, owing, perhaps, to the large tail and fin and the long chassis, which acts like a pendulum. When hand launched it flies some 300 ft. at a high altitude and a very slow but even speed.

Messrs. T. W. K. Clarke's New Aero Silk.

We have received from the above well-known firm a sample of their latest Flight Proof Silk. The silk is well proofed and light, its weight working out at .75 oz. per square yard. The price of the same is extremely reasonable, viz., 1s. a yard 18 ins. wide, and 2s. a yard 36 ins. wide. Aeromodelists who have not so far given it a trial should certainly do so; we are quite certain they will not be disappointed.

Crystal Palace and District Model Aero Club.

Mr. A. M. Hawes, 125A, Croydon Road, Anerley, writes, saying that he has been appointed secretary of the above club, and that he will be pleased to hear from anyone in that district who may be interested in model aviation.

Model Club for Coventry.

Mr. P. Haselock, 152, Gulson Road, Coventry, also writes as follows:—"I am desirous of forming an aero club in Coventry for the building of models of every description. I shall, therefore, be greatly obliged if anyone interested will kindly write me at the above address. There has been a club before in Coventry; I believe this club is still in existence when the president wishes to call a meeting, but it is practically dead, and this may, of course, make it a little harder for the new one to start. I hope the proposed club will be run on scientific lines, something after the same idea as sketched out from time to time in FLIGHT."

The Power-Driven Competitions of August 8th and 13th.

Several correspondents have written to us with respect to the

Lady Shelley Competition for power-driven hydro-aeroplanes, at the Welsh Harp, on August 8th, and the Sir John Shelley Competition for r.o.g.-engined or power-driven models, at Hendon, on August 13th, with respect to the following rule governing these two competitions, viz.: The design of models submitted must be applicable to full-size machines. The best advice which we can give to anyone having an engined model which will really fly is to enter for the competitions. It remains for the judges to decide whether any or none of the designs submitted are applicable to full-sized machines. Many, if not all, of the competitors will be in the same boat, and it will be most unfortunate if this rule keeps any intending competitor from "trying his luck."



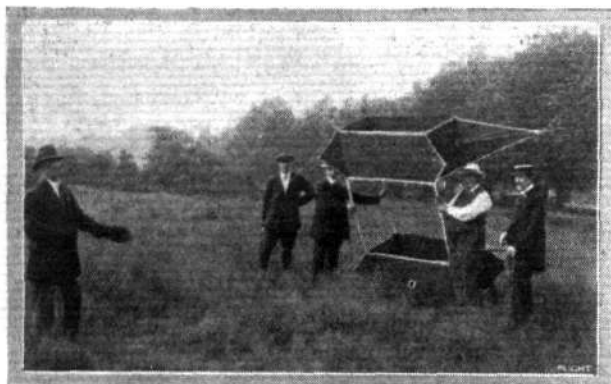
KITE AND MODEL AEROPLANE ASSOCIATION.

Official Notices.

Baden-Powell Competition.—The sixth annual competition for the Baden-Powell Challenge Shield for the best kite of the year took place on Wimbledon Common on July 18th. There were 16 competitors, including the holder, A. W. Brown, who has held the shield for four years. The judges were Major B. Baden-Powell (donor of the shield), Mr. M. Balston, and Mr. F. T. Pringuer. The following are the results of the first seven:—

Place.	Competitor.	Make.	Angle.	Stability.	Strength.	Portability.	Total marks.
1	W. Collins	Box and wing	154	95	60	50	359
2	A. W. Brown	"	145	85	74	50	354
3	H. Stewart	Double box "Brootype"	143	92½	60	50	345½
4	B. Varnals	Roloplane	128	90	65	50	333
5	A. Collins	Box and wing	136	85	60	50	331
6	T. Brown	"	114	95	70	50	329
7	Mrs. W. H. Akehurst	Admiralty	106	105	64	50	325

Mr. Collins, therefore, holds the shield for one year (from date of prize distribution), and wins the gold medal of the Association. Messrs. A. W. Brown and H. Stewart won respectively the silver and bronze medal of the Association.



A group of competitors prior to the start.

After the Major announced the results, the gen. hon. sec. proposed a vote of thanks to Major B. Baden-Powell and the judges for having so kindly acted as judges, which was carried amid applause.

Women's Aerial League Competitions.—These Kite and Model Competitions will be held on Saturday, 25th, on Wimbledon Common. The Model Competition will be held first, commencing at 3 o'clock sharp. To enable those competitors who have entered in both events to compete, the Kite Contest will follow directly after the Model Competition.

Model Competitions at the London Aerodrome, Hendon.—August 12th, at 2.30 p.m.; entries close first post August 6th. Event I—Single-Screw Weight-Carrying Competition for the London Aerodrome Model Challenge Trophy for models rising off the ground. Prizes: 1st, the London Aerodrome Model Challenge Trophy and Silver Plaque (presented by Mr. Claude Grahame-White); 2nd, silver medal of the Association; 3rd, bronze medal of the Association. Tests: A, duration of flight (minimum of 25 secs.); B, stability; marks, duration actual seconds, 25 for stability. Additional rules governing this competition: 1. Models must not weigh less than 16 ozs. unloaded. 2. Each model must carry a dead-weight of a quarter of its own weight. This weight or weights must be supplied by each competitor, and be easily detachable for weighing. 3. Competitors must be at the judges' flag at 2.45 p.m.; any competitor not present at that time will be disqualified. Event II—Competition for Sir John C. Shelley's Trophy, for power-driven models rising off grass. Prizes: 1st, silver trophy; 2nd, silver medal of the Association; 3rd, bronze medal of the Association. Marks: Design 100; duration actual seconds; minimum duration 25 seconds. Additional rule governing this competition: 1. The design of models submitted must be applicable to full-size machines.

27, Victory Road, Wimbledon. W. H. AKEHURST, Gen. Hon. Sec.

AFFILIATED MODEL CLUBS DIARY.

CLUB reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Bristol and West of England Aero Club (Model Section) (42, ROYAL YORK CRESCENT, CLIFTON, BRISTOL).

Bristol International Exhibition.—As announced in FLIGHT last week, the Summer Model Aeroplane Competition has been postponed from July 18th until August 1st. The amended programme is as follows:—July 27th to

August 1st. Models on view in the International Pavilion daily, 11 a.m. to 10.30 p.m.; Saturday, 11 a.m. to 1 p.m. August 1st, at 3 p.m. Model Flying Competition in the Pageant Ground—Event A. Contest for Single-screw Models; 1st, 2nd, and 3rd prizes. Event B. Contest for Multiple-screw Models; 1st, 2nd, and 3rd prizes. Events A and B will be judged on a marking system which has been introduced with the idea of improving the trend of model design, and encouraging experimental research. Marks will be awarded for: Design 25 per cent. and construction 15 per cent., longitudinal stability 15 per cent., lateral stability 10 per cent. and directional control 15 per cent., rising 10 per cent. and landing 10 per cent. Event C. Target Contest; 1st and 2nd prizes, awarded to models which land nearest to the bull's eye. Event D. Looping the Loop Contest; 1st and 2nd prizes; awarded to the models which complete the greatest number of loops in one flight. A number of exceptionally fine model aeroplanes have been entered in this competition, and everyone interested in aviation in the West of England should make a point of seeing the models on view in the International Pavilion, and of being present at the flying competition.

Leytonstone and District Aero Club (64, LEYSPRING ROAD).

JULY 26TH, flying Wanstead Flats, 6.30 and 10.30 a.m. until further notice. All correspondence to Mr. H. Bond, 23, Woodhouse Road, Leytonstone, E.

Paddington and Districts (77, SWINDERY ROAD, WEMBLEY).

JULY 25TH, competition for single propeller models. August 1st, open competition for the Paddington cup. For particulars see club notice in FLIGHT, July 3rd. Latest time for receiving entries Monday, July 27th.

UNAFFILIATED CLUBS.

Finsbury Park and District (66, ELFORT ROAD, HIGHBURY, N.).

JULY 25TH, flying at Finsbury Park, 3.30 p.m.

S. Eastern Model Ae.C. (1, RAILWAY APPROACH, BROCKLEY).

JULY 26TH, Blackheath, 6.30 to 10 a.m.



PUBLICATIONS RECEIVED.

Flight without Formula. By Commandant Duchene; translated by John H. Ledebroe, B.A. London: Longmans, Green and Co. Price 7s. 6d. net.

Aircraft in War. By J. M. Spaight, LL.D. London: Macmillan and Co., Ltd. Price 6s. net.



IMPORTS AND EXPORTS, 1913-1914.

AEROPLANES, airships, balloons, and parts thereof (not shown separately before 1910). For 1910 and 1911 figures, see FLIGHT, January 25th, 1912, and for 1912 and 1913, see FLIGHT for January 17th, 1914:—

	Imports.		Exports.		Re-Exportation.	
	1913.	1914.	1913.	1914.	1913.	1914.
January	12,097	5,945	4,005	210	1,510	879
February	17,361	28,132	3,447	106	690	441
March	20,425	27,731	1,924	1,934	1,042	1,440
April	15,593	11,384	5,524	1,175	1,413	1,473
May	31,241	17,062	3,726	4,059	830	9,484
June	14,905	15,967	1,408	5,082	1,106	142
	111,622	106,221	20,034	12,566	6,591	13,859



Aeronautical Patents Published.

Applied for in 1913.

Published July 23rd, 1914.

- 14,936. A. E. PUPIN. Transmission of power to aerial propellers.
- 15,727. A. E., H. L. AND H. O. SHORT. Aeroplanes.
- 17,033. J. A. STEINMETZ. Destruction of aircraft.
- 20,308. H. FABRE. Aeroplane undercarriage.
- 27,132. FRIED KRUPP AKT. GES. Sighting devices for missile-dropping appliances.

Applied for in 1914.

Published July 23rd, 1914.

- 10,708. BALLONHALLENBAU GES. Sliding door for airship sheds.
- 10,723. BALLONHALLENBAU GES. Sliding door for airship sheds.

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